Environmental Impact Report

600 Harrison Street

DRAFT EE 82.241

Publication Date: April 1, 1983
Public Hearing Date: May 5, 1983
Comment Period: April 1, 1983
to May 5, 1983

Environmental Impact Planning Corporation
319 Eleventh Street • San Francisco, California 94103

Telephone (415) 864-2311

TRANSMITTAL

To: Reviewers of Draft EIR for 600 Harrison Street San Francisco CA

Date: 27 April 1983

Job Name: 600 Harrison Street DEIR

Job Number: Draft EE 82.241

We Are Sending You:
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The Following: Shadow Pattern Analysis Figures 24, 25, 26 to replace Figures 24, 25, 26 in the Draft EIR for 600 Harrison Street, San Francisco.

Remarks: The original graphics were very difficult to read because the tone for existing shadows did not reproduce well. In these graphics that tone has been replaced by a dot screen.

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By: G J Burwasser, Project Manager

SAN FRANCISCO DEPARTMENT OF CITY PLANNING
450 McAllister Street · San Francisco · CA 94102
(415) 558-5260

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600 Harrison Street

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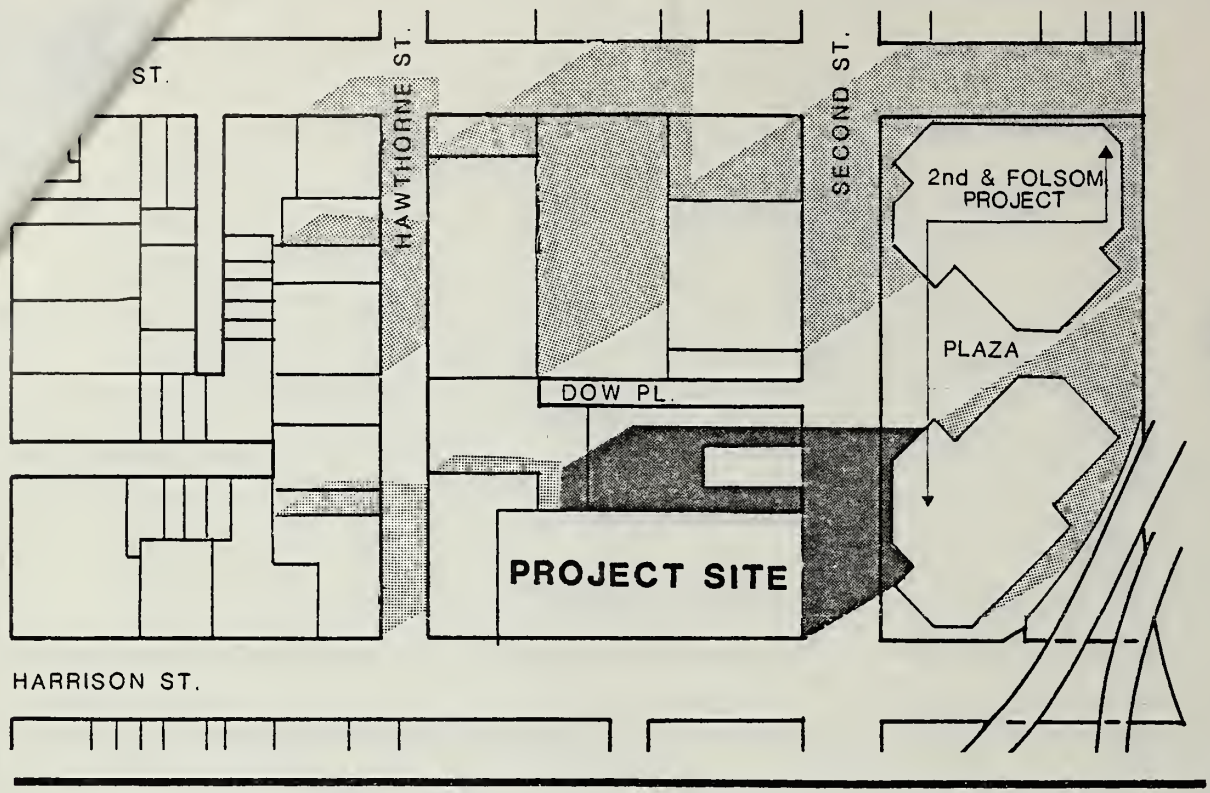
WRITTEN COMMENTS SHOULD BE SENT TO THE ENVIRONMENTAL REVIEW OFFICER
450 McALLISTER ST ,SAN FRANCISCO ,CA.94102



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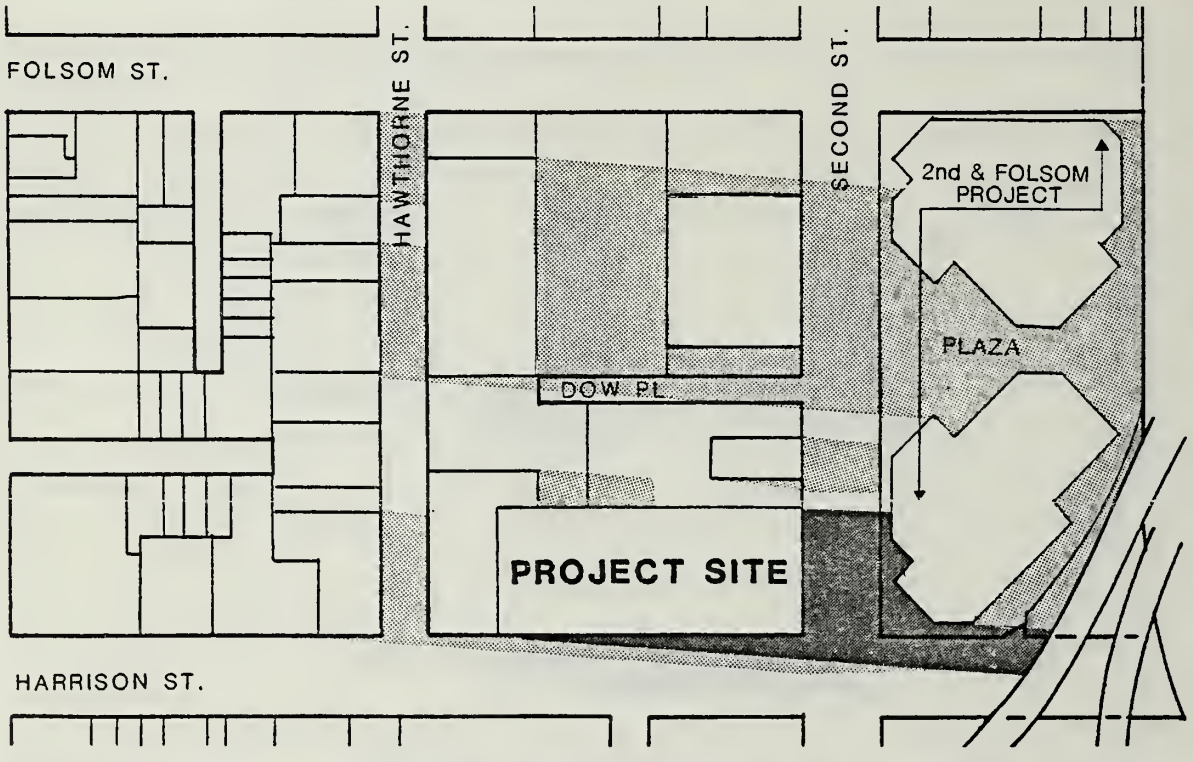


Ⓑ 4PM

SOURCE: EIP

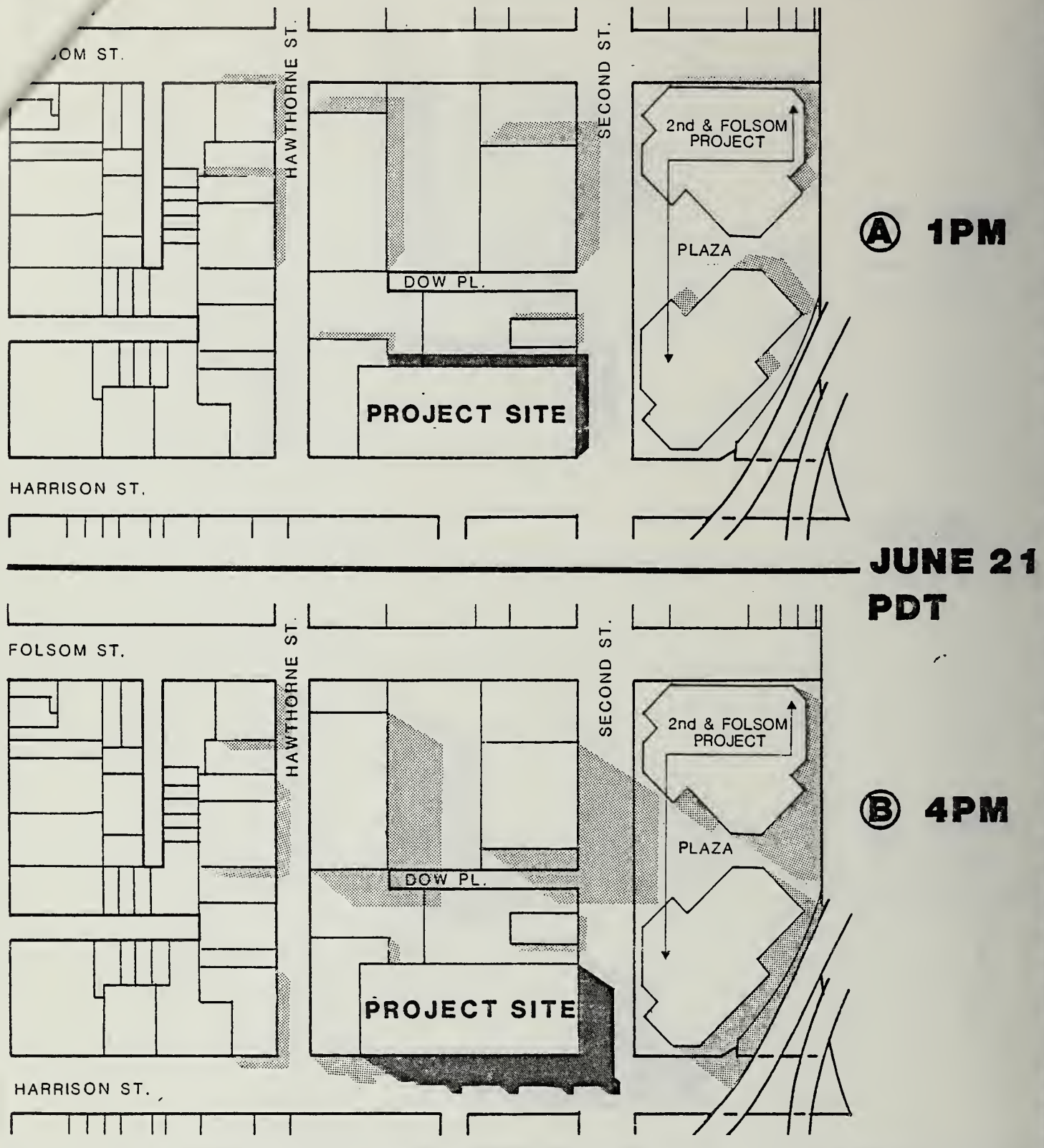
EXISTING SHADOWS

SHADOWS ADDED BY PROPOSED PROJECT

SCALE 0 100 200 400 FEET

600 Harrison Street

SHADOW PATTERN ANALYSIS **FIGURE 24**



SOURCE: EIP

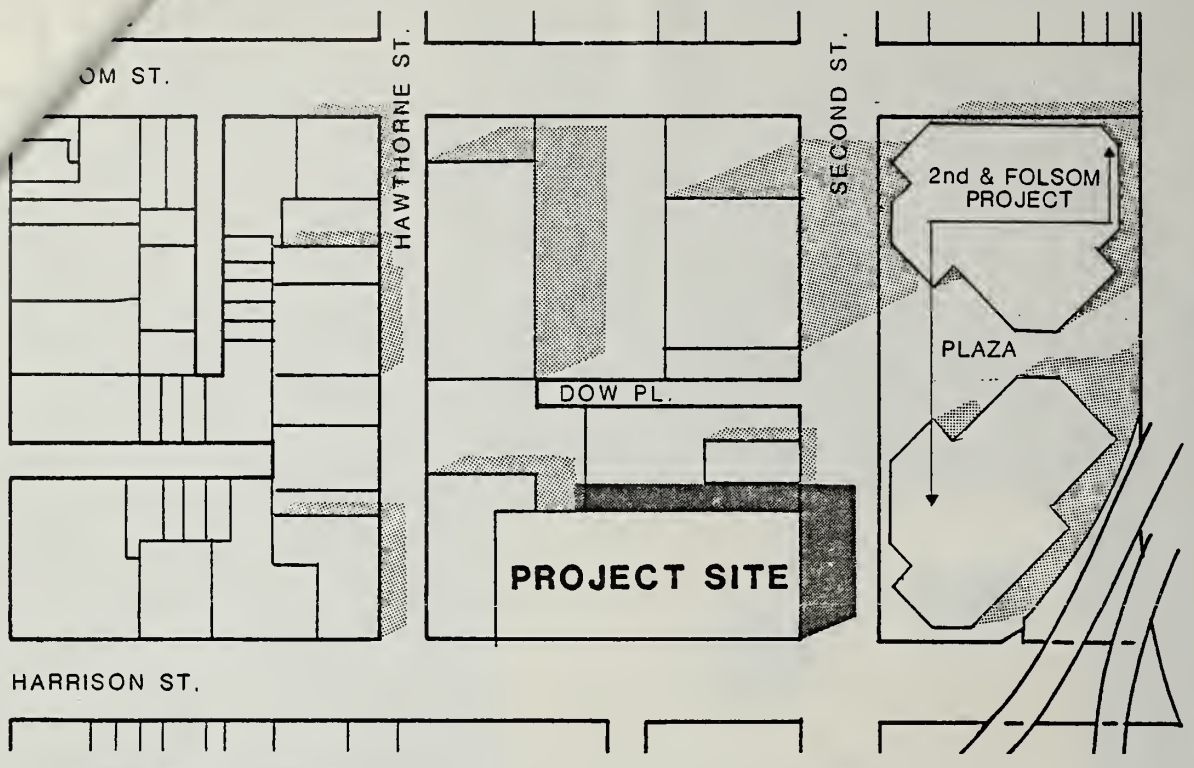
EXISTING SHADOWS

SHADOWS ADDED BY PROPOSED PROJECT

SCALE 0 100 200 400 FEET

600 Harrison Street

SHADOW PATTERN ANALYSIS **FIGURE 25**



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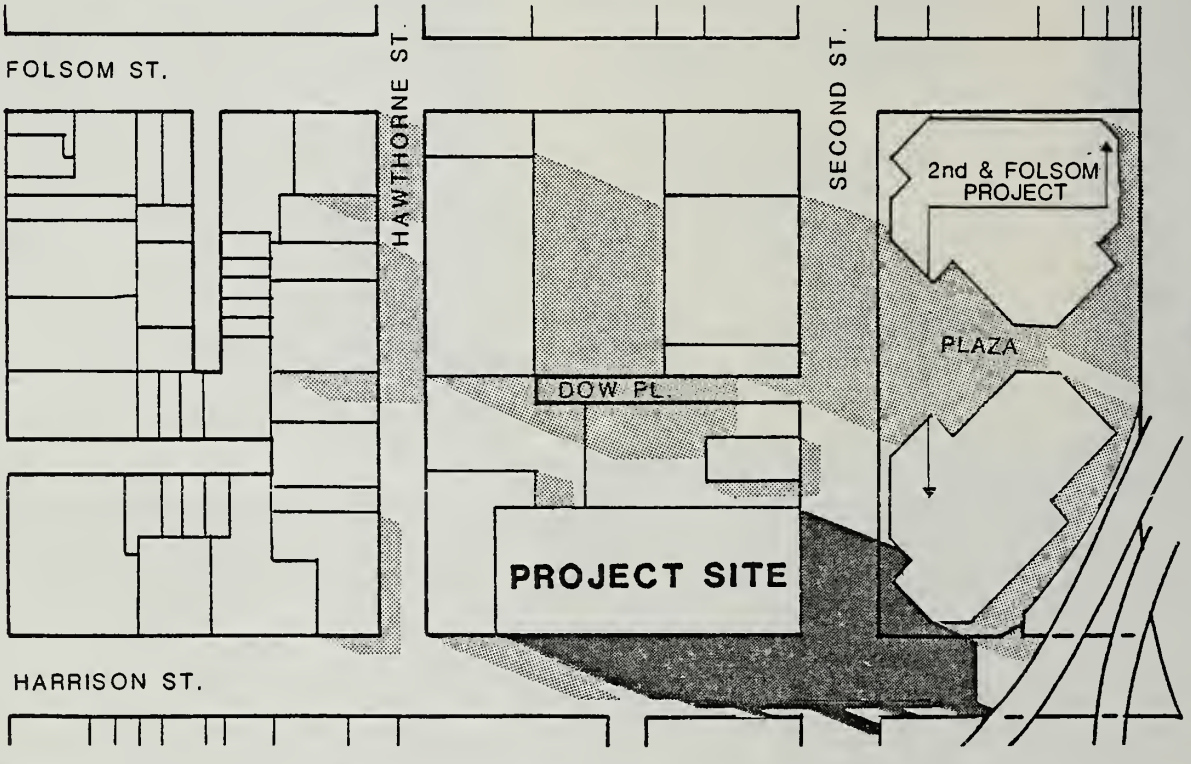

(B) 4PM

MAR 21 PST/
5P.M. SEPT 21 PDT

SOURCE: EIP

EXISTING SHADOWS

SHADOWS ADDED BY PROPOSED PROJECT

SCALE 0 100 200 400 FEET

600 Harrison Street

SHADOW PATTERN ANALYSIS **FIGURE 26**

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I. SUMMARY

A. PROJECT DESCRIPTION

The 600 Harrison Street project would be located on Assessors Block 3750, Lot 73 at the northwest corner of the Second/Harrison Street intersection in a M-1 (Light Industrial) District (Figure 1, page 8). The 43,862.5 square-foot site is close to freeway access ramps and is currently occupied by an asphalt parking lot which provides approximately 220 public parking spaces (not all of minimum accepted width).

The project sponsor, Braemar Holdings Corporation, SA, proposes to construct a six-story office building including ground floor retail space. The structure would be 80 feet high and would cover approximately 39,000 square feet of ground area. It would contain approximately 228,000 gross square feet of office floor area and 10,000 gross square feet of retail floor area. Parking for 116 vehicles would be provided in one basement level excavated to approximately 12 feet below the surface. Access to parking facilities, two loading docks and pedestrian entrances would be from Harrison Street. The project would require a variance for exception to the off-street parking requirement of 407 spaces.

The project sponsor estimates construction would cost approximately $20,500,000 (in 1983 dollars) and would take about twelve months.

B. ENVIRONMENTAL IMPACTS

1. Initial Study

An Initial Study was prepared for the 600 Harrison Street project to identify potential environmental issues resulting from the proposed project; these issues are covered in this EIR. Certain potential environmental issues were determined to be insignificant and are therefore not addressed in this EIR, including relocation, road construction, operational noise, odors or burning of materials, utilities and public services (except for cumulative effects), biology, surface water, health hazards and historic resources. A copy of the Final Initial Study is attached to this report as Appendix A, page A-1.

2. Land Use and Zoning

The project would comply with zoning, height and floor area requirements of the Planning Code. The existing 220-space surface parking lot would be replaced by the proposed 80-foot-tall office building. The project would cumulatively contribute to new and proposed development occurring in the South of Market area in general and along Second Street between Mission and Townsend Streets in particular (page 54). Office projects proposed in the South of Market area are included in all cumulative analysis for downtown office development.

3. Visual Quality and Urban Design

The proposed project would generally respond to provisions of the Urban Design Plan. The project would momentarily obstruct a portion of views west to travelers using the lower levels of the elevated freeway ramps nearby. However, when completed, the Second and Folsom project would block views of the project site from the freeway ramps (page 59).

4. Employment, Housing and Fiscal Considerations

The project would create permanent employment for approximately 950 persons, including 910 office jobs, 30 retail jobs, and nearly 10 jobs for janitorial/service workers. Approximately 1,010 additional jobs in the Bay Area would be indirectly created through the multiplier effect. The project site presently contains a self-service parking lot which sustains no full-time on-site employment. The potential increased revenues to the City would be approximately $509,200 annually (page 73).

According to the City Planning Commission's Office Housing Production Program (OHPP), the housing requirement for the project would be 202 units (page 64).

5. Transportation, Circulation and Parking

The proposed project would generate about 595 new peak hour person trips to and from the project site. Of these, an estimated 300 would be vehicular trips, 90 by Muni, 50 by BART and the remaining 155 by other regional pubic transit. The project would contribute about 1.1% of the cumulative peak hour trip generation of the cumulative office projects (page 79).

The project would contain 116 parking spaces, 291 less than required by the Planning Code. A variance is sought for exception to the off-street parking requirement.

The project would generate a parking demand for about 460 long-term and 15 short-term spaces. The project's added parking demand and displacement of the existing 220 space lot would increase surrounding occupancy from 97% to 100% (page 88).

6. Air Quality and Climate

Violations of the State 24-hour TSP standard may occur as a result of construction activities. Projected CO concentrations for 1988 were calculated for the four intersections most heavily impacted by the project. The results indicated that no violations of State or federal air quality standards would occur as a result of the proposed project or projected cumulative develpoment (page 92).

The orientation of the six-story project would moderately accelerate winds at ground level on Dow Place. Pedestrian areas adjacent to the site along Second Street would be sheltered by the project (page 96).

In mornings, for all seasons, the project would cast shadows to the north and east. In winter project shadows would shade a portion of the southern corner of the plaza for the approved Second and Folsom (Marathon) Project. In summer, spring and fall, the only pedestrian area shaded by the project would be a portion of a Second Street sidewalk closest to the project (page 96).

7. Noise

The noisiest activity associated with the construction of the proposed project would be the use of impact wrenches (sporadically used over a two month period at the early part of construction). Noise levels would be expected to reach about 82 dBA inside the adjacent, one-story Pacific Telephone building, the Superior Coffee and Tea Company building and buildings directly across the project site on Harrison Street. At this level, workers would be expected to be annoyed and distracted (page 101).

8. Community Services

Cumulative development would eventually increase the demand for public services due to the resulting additional population, property and traffic. The proposed project would not require additional fire protection staff or equipment (page 103).

9. Energy

The total estimated annual energy use within the proposed project (based upon other City projects and Title 24 compliance) would be 30.73 billion BTU or 5,500 barrels of oil (page 106).

10. Historic and Cultural Resources

The proposed project would not require the demolition of any historic buildings. Based on the results of an archaeological study of the project site and the relatively shallow depth of excavation proposed for the project, the potential for encountering cultural resources during construction is expected to be limited (page 111).

11. Geology and Seismicity

About 32,000 tons of artificial fill and bedrock would be excavated and removed from the site. Major on-site impacts related to an earthquake with the Richter magnitude of the 1906 San Francisco earthquake would be limited to strong groundshaking. Earthquake-induced liquefaction, settlement or flooding are not potential hazards (page 112).

C. MITIGATION MEASURES

MITIGATION MEASURES INCLUDED IN THE PROPOSED PROJECT

- Adherence to the OHPP requirement by causing 202 dwelling units to be constructed (page 115).
- Contribution to a fund for maintaining and augmenting transportation service (Ordinance 224-8), in an amount proportionate to the demand created by the project (page 116).
- Contribution of funds toward building a transit shelter (page 116).
- Implementation of a transportation management program to encourage increased auto occupancy and reduce project parking demand. Reduced traffic volumes would also reduce air pollutant emissions (page 116).
- Maintenance of safe and convenient pedestrian areas during construction (page 116).
- Recommendations specified in a site-specific geotechnical report would be followed to maintain efficient and safe construction within City Building Code standards (page 120).

- Use of high-efficiency lighting and mechanical systems to reduce energy use (page 119).
- Protection of City drains from sedimentation during construction by sweeping and straw bailing (page 120).

MITIGATION MEASURES NOT INCLUDED IN THE PROPOSED PROJECT

Mitigation measures under consideration by the project sponsor include:

- Opening about half the parking spaces to the general public with preference given to car/van-pools (page 117).
- Use of mufflers or shrouds on particularly noisy construction equipment (page 118).
- Use of a construction fence to screen the Pacific Telephone building and lower levels of adjacent buildings from ground-level construction noise (page 118).
- Use of active and passive solar features as well as individual utility metering to reduce energy consumption (page 119).

F. ALTERNATIVES

1. No-Project

The project site would remain as a parking lot and no environmental impacts associated with the proposed project would occur. The project sponsor has rejected this alternative because it would perpetuate an inefficient and wasteful use of land resources within an area of new development (page 123).

2. Interim Controls; No Exceptions to Planning Code

This alternative represents the maximum office space with associated off-street parking which would meet all requirements of the City Planning Code. Thus, 235 parking spaces, 128,000 square feet of office space and 10,000 square feet of retail space would be provided. The reduction of office space would generate fewer traffic-related impacts and a decrease in energy consumption when compared to the proposed project. The loss of setbacks and recesses in this alternative would alter the structure's visual impacts to appear bulkier than the proposed project. Additional on-site parking would relieve parking demands. The project sponsor rejected this alternative since it would substantially reduce

the available office space on the project site, decrease the structure's visual quality by the increase in apparent bulk and not meet the project sponsor's stated objectives (page 124).

3. Mixed Use: Combined Office, Retail and Residential

This alternative would consist of two structures containing the same total gross square feet as the proposed project. A total of 88 dwellings units (79,800 gross square feet) would be provided in a nine-story residential structure with both Harrison and Second Street frontages. Approximately 147,500 gross square feet of office space and 10,000 gross square feet of retail space would be provided in a five and one-half story structure fronting on Harrison Street. A total of 116 parking spaces would be provided beneath both structures.

This alternative represents a housing mix that could be accommodated on the project site by requesting conditional use authorization for a Planned Unit Development. It would not comply with off-street parking requirements. Like the proposed project, a variance would be required. Given the amount of office space proposed, this alternative would require 44 dwelling units in addition to those included on-site to fulfill the Office Housing Production Program (OHPP) requirement.

The reduction in office space and introduction of residential space would decrease traffic impacts, traffic-generated noise and air quality impacts and could increase energy consumption. Demand for public services would be increased and visual impacts would remain consistent with the proposed project. This alternative was rejected by the project sponsor because the inclusion of residential units would require additional infrastructure to service the units, construction costs would be increased and the office space would be decreased. In addition, the sponsor believes it would be difficult to market housing units due to the visual and noise effects of the freeway located within 1,000 feet of the project site (page 125).

II. PROJECT DESCRIPTION

A. LOCATION

The proposed 600 Harrison Street building would be located in the South of Market area adjacent to San Francisco's Financial District in an M-1 (Light Industrial) district. The project site is on the northwest corner of the block bounded by Second, Third, Folsom and Harrison Streets. The site is located in Assessor's Block 3750, Lot 73 and contains 43,862.5 square feet. The location of the project site is shown in Figures 1 and 2, pages 8 and 9.

B. OBJECTIVES OF SPONSOR

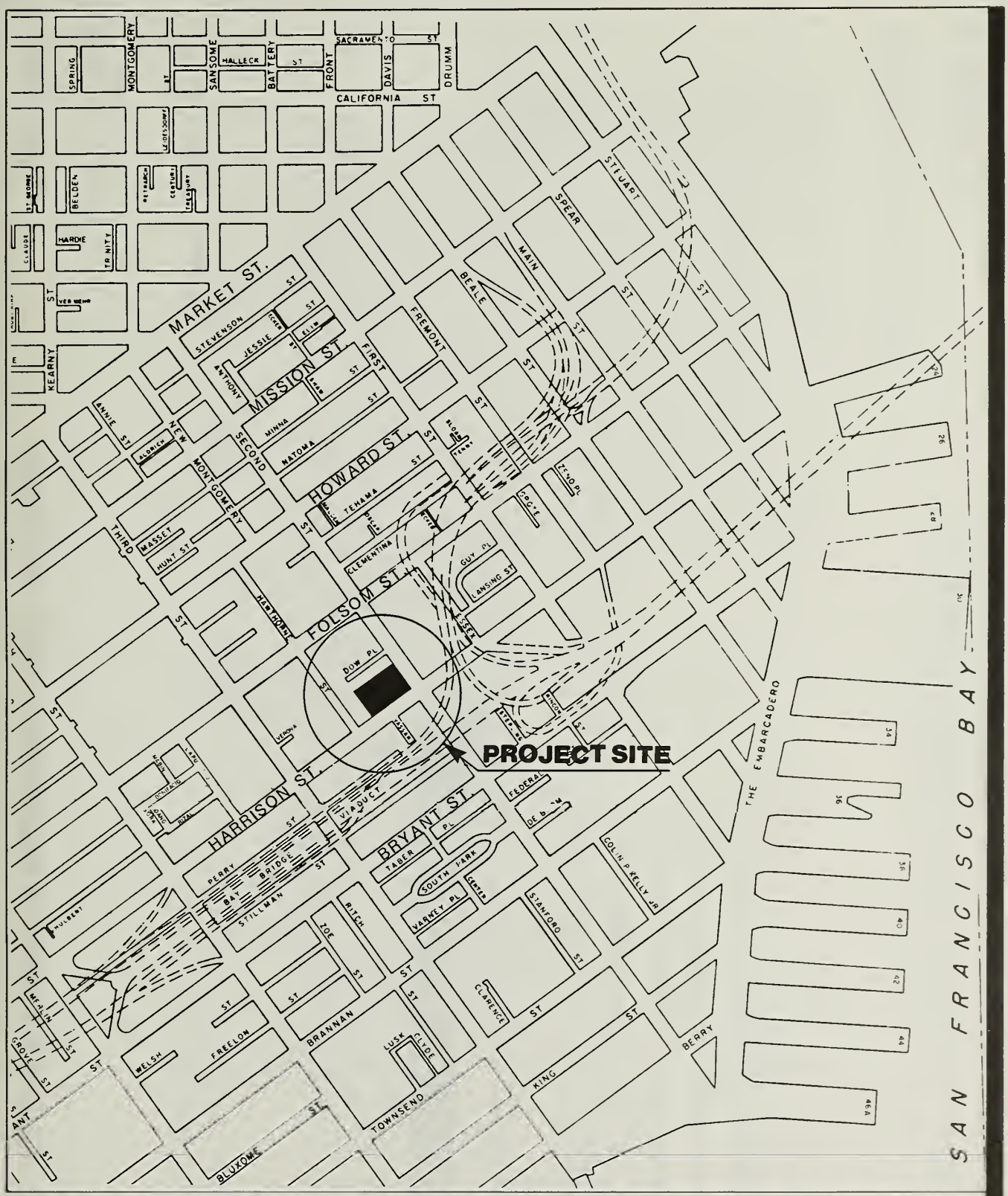
Braemar Holdings Corporation, SA, project sponsor, proposes to provide a six-story office building with partial ground-floor retail space to include a coffee shop, drug store or similar neighborhood services on land owned by the project sponsor. The project site is in an area of the City that is experiencing revitalization and an influx of new development. It is the intent of the project sponsor to make a positive contribution to the City while achieving a reasonable return on its investment.

C. PROJECT CHARACTERISTICS AND SCHEDULING

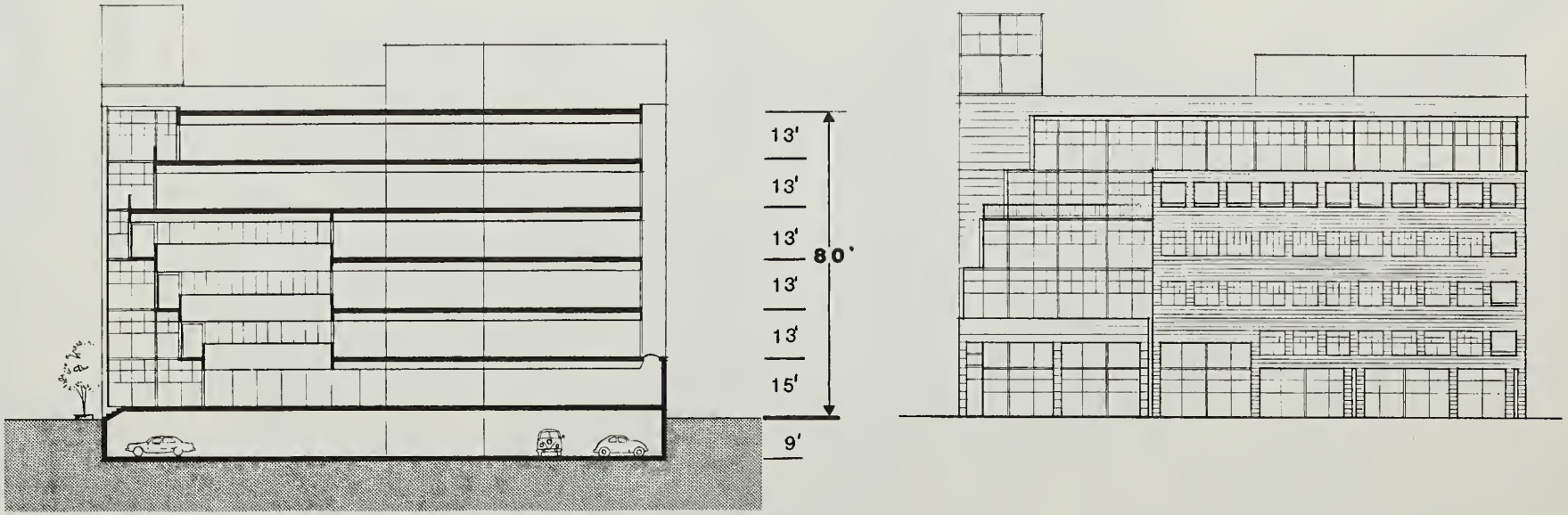
The total project, including office, retail, storage, parking, mechanical and service space would be approximately 238,000 gross square feet. Of the gross square footage, about 228,000 square feet of office space and 10,000 square feet of ground-level retail space would be provided. The 80-foot-high building, which would contain six stories above grade with two loading docks and one level of subsurface parking (Figures 3 through 8, pages 10 through 15), would conform to the 80-foot height limit and the "K" bulk district limitations prescribed for the area. The basement level would contain about 43,800 square feet to accommodate parking for 116 cars (Figure 5, page 12). The project site currently contains a surface parking lot of 220 spaces (not all of minimum accepted width) that would be demolished and replaced with the proposed structure.

600 Harrison Street

REGIONAL LOCATION MAP **FIGURE 1**



SITE LOCATION MAP **FIGURE 2**

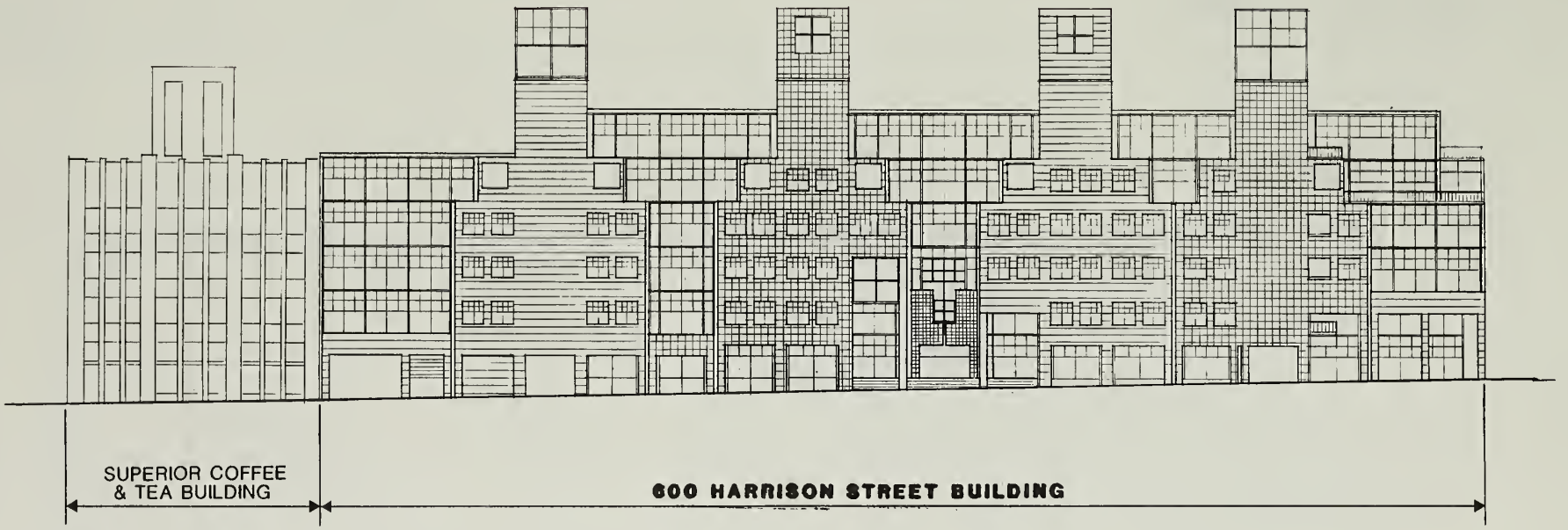


SOURCE: TAI ASSOCIATES /ARCHITECTS

SCALE 0 15 30 60 FEET

600 Harrison Street

BUILDING ELEVATION/SECTION: 2ND STREET **FIGURE 3**

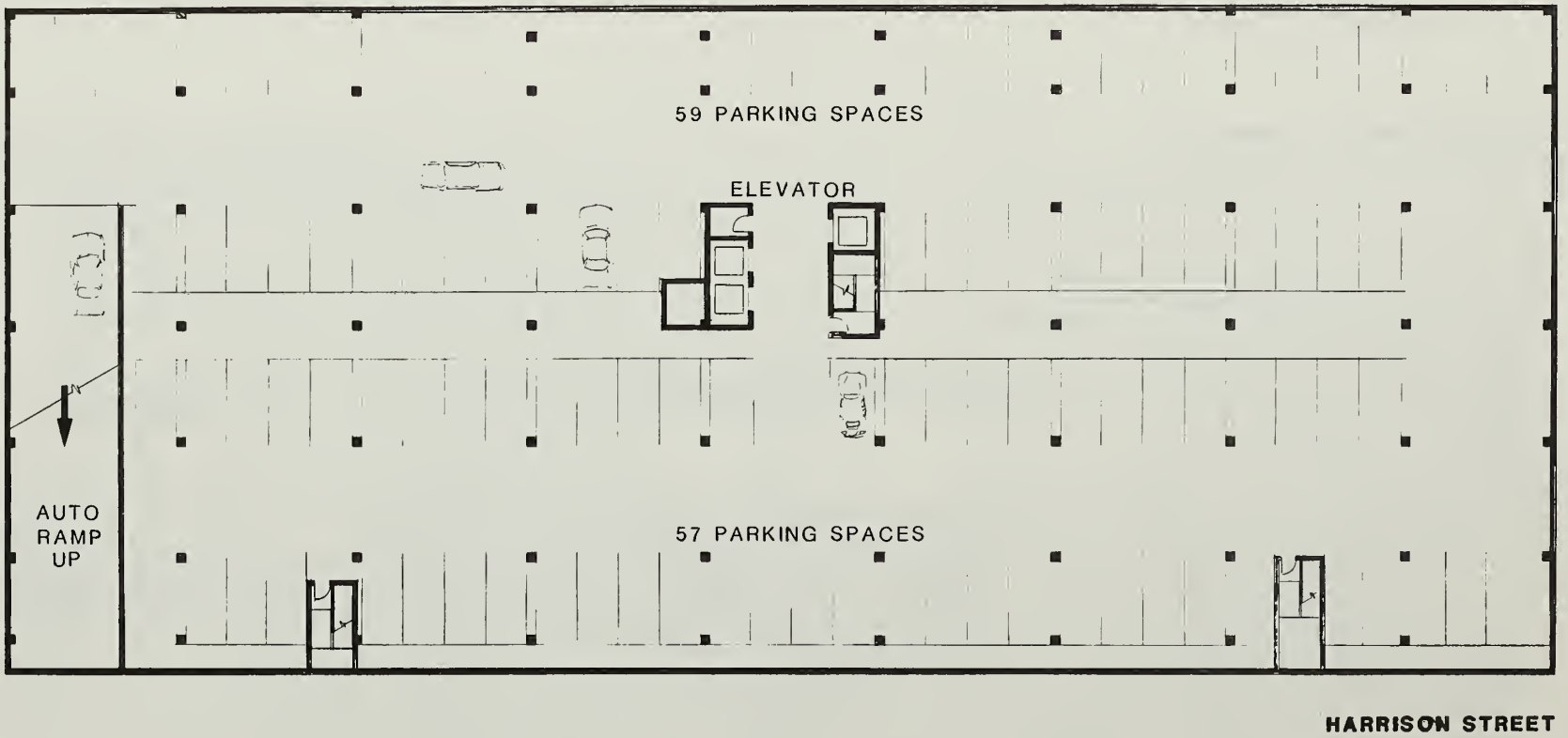


SOURCE: TAI ASSOCIATES /ARCHITECTS

SCALE 0 20 40 80 FEET

600 Harrison Street

BUILDING ELEVATION: HARRISON STREET **FIGURE 4**

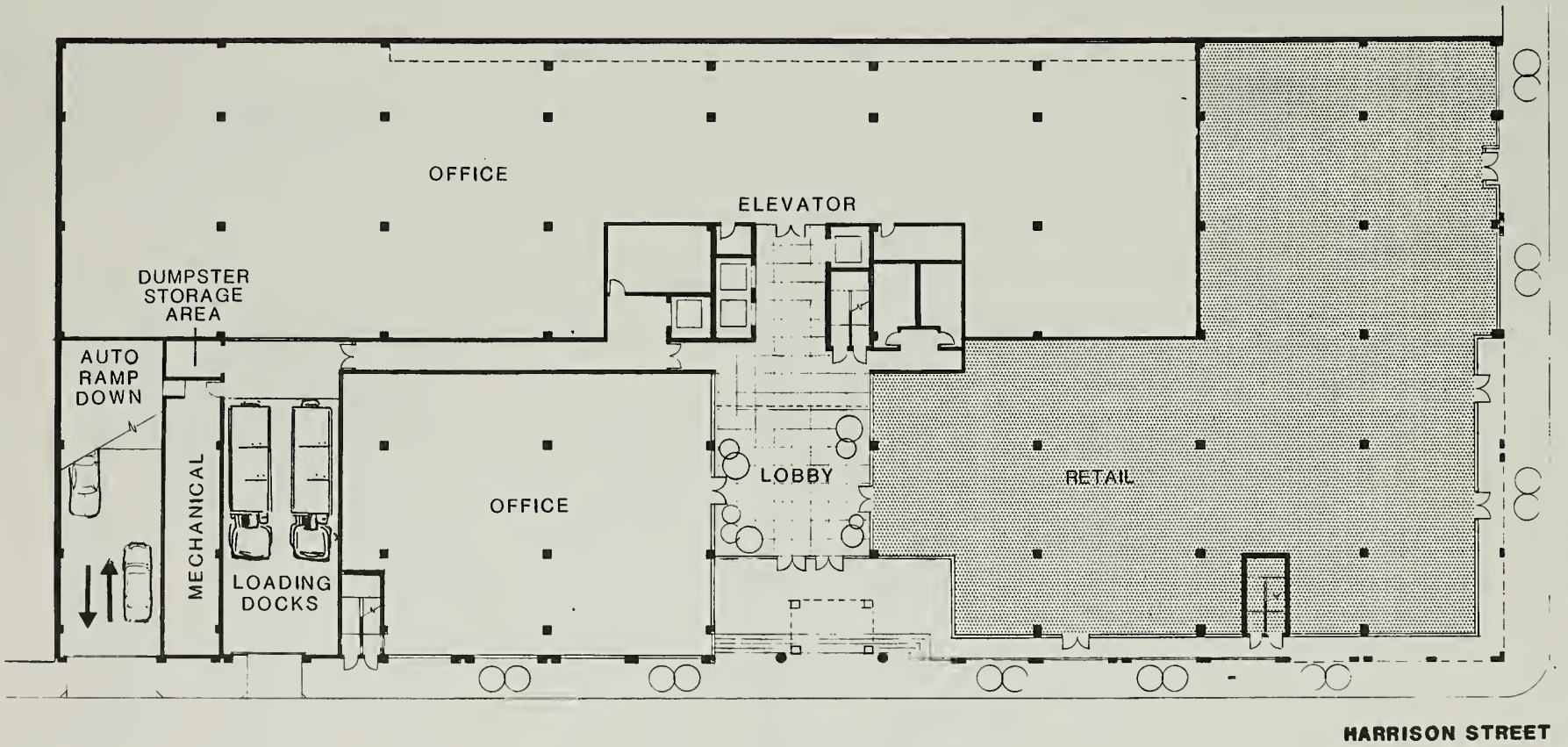


SOURCE: TAI ASSOCIATES /ARCHITECTS

SCALE 0 15 30 60 FEET

600 Harrison Street

PARKING LEVEL PLAN **FIGURE 5**



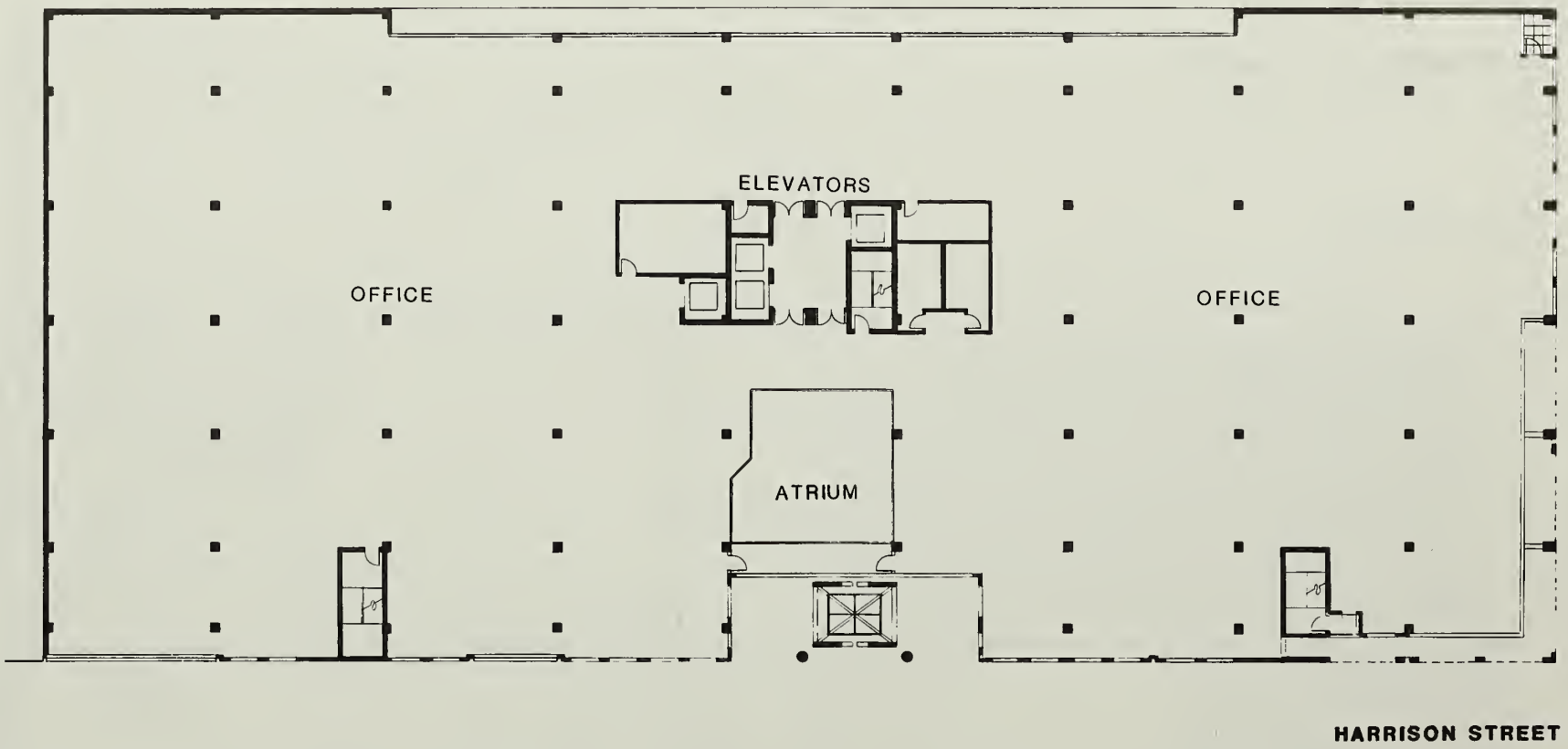
SOURCE: TAI ASSOCIATES /ARCHITECTS

TREES (PROPOSED)

SCALE 0 15 30 60 FEET

600 Harrison Street

FIRST FLOOR AND SITE PLAN **FIGURE 6**



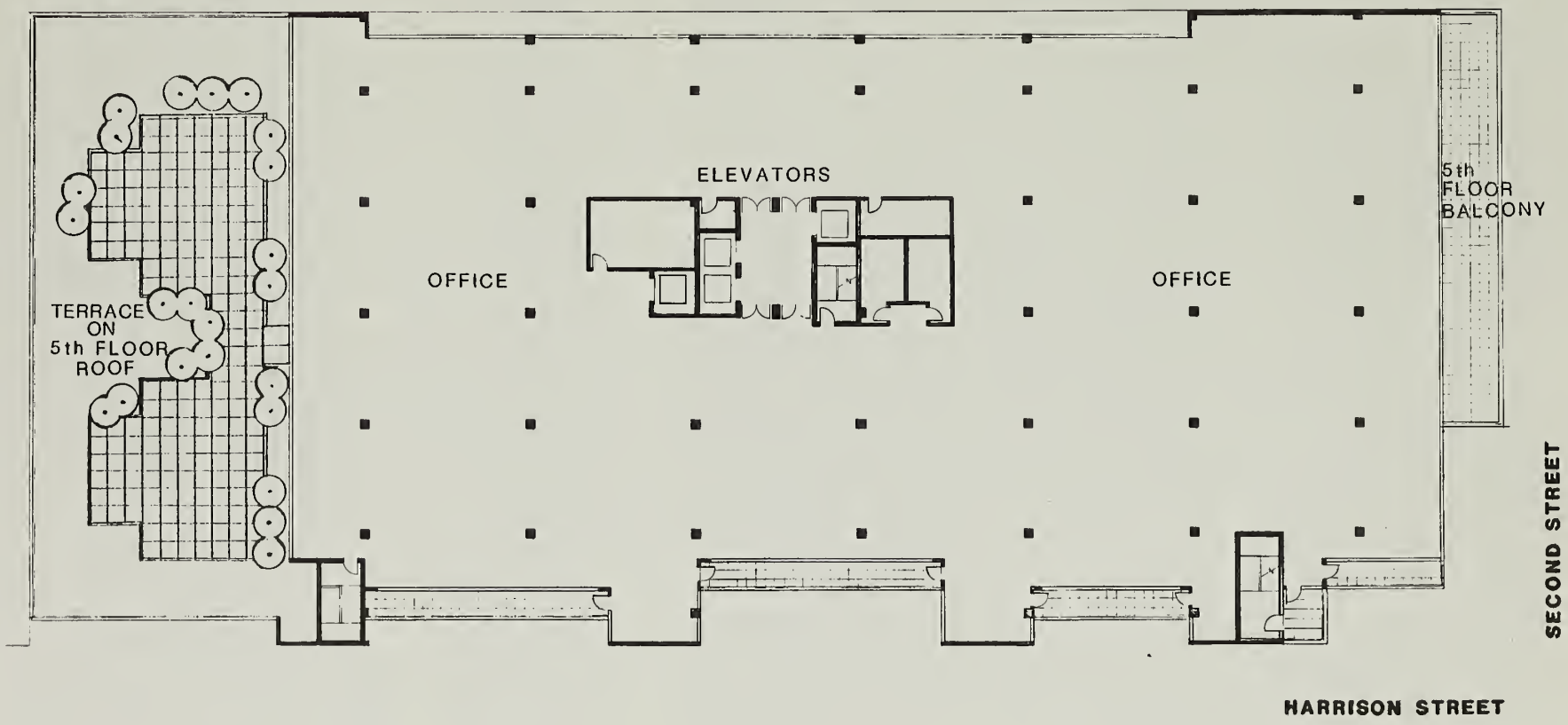
SOURCE: TAI ASSOCIATES/ARCHITECTS

BALCONIES

SCALE 0 15 30 60 FEET

600 Harrison Street

TYPICAL FLOOR PLAN (FLOORS 2-5) **FIGURE 7**



SOURCE: TAI ASSOCIATES / ARCHITECTS

BALCONIES

SCALE 0 15 30 60 FEET

600 Harrison Street

SIXTH FLOOR PLAN

FIGURE 8

The first level, planned primarily for office space, would also include a lobby, retail space, mechanical space and access to parking and loading facilities (Figure 6, page 13). The lobby area would connect to a main entrance on Harrison Street. Retail space would occupy the Second Street side of this level as well as the east half of the Harrison Street side. Access to parking and loading facilities would be from Harrison Street at the southwest end of the building. The structure would occupy about 39,000 square feet of the project site.

The second through sixth floors are planned for office space and would contain about 40,000 square feet on the second floor, 42,000 square feet on both the third and fourth floors, 41,000 square feet on the fifth floor and 34,000 square feet on the sixth floor (Figures 7 and 8, pages 14 and 15). The second, third and fourth floors would feature an atrium, a central elevator/service area and office space designed to allow unrestricted placement of office partitions. The fifth and sixth floors would have the central elevator/service area, an open office plan and access to balconies on the Harrison Street and Second Street frontages. The building would be five stories high where it would be adjacent to the Superior Coffee and Tea Building on Hawthorne Street. The sixth floor would be set back about 60 feet from the Superior Coffee and Tea Building (Figure 4, page 11). Approximately 5,000 square feet of exterior open space would be provided as a landscaped terrace on top of the fifth floor roof and adjacent to the Superior Coffee and Tea Building (Figure 8, page 15). Access would be provided from the sixth floor of the proposed project.

The architectural firm for the proposed project is Tai Associates/Architects of San Francisco. The estimated construction cost of the project is $20,500,000 (in 1983 dollars). Construction would be expected to occur over a 12-month period, beginning in January 1984 and completed in January 1985.

D. REQUIRED APPROVALS

Certification of the Environmental Impact Report (EIR) by the City Planning Commission following public review of the Draft EIR (DEIR) and responses to comments collected during the DEIR review period is the first step in processing the proposed project. The project would require a variance for exception to the off-street parking requirement. The Planning Code would require 407 parking spaces and two loading docks for the site. The proposed project would contain 116 below-grade parking spaces. Two loading docks would be provided at street level.

Pursuant to Section 305 of the San Francisco Planning Code, a development must meet certain criteria before a variance permit may be granted. These criteria include requirements that the development would be in harmony with the general purpose and intent of the Planning Code; would not adversely affect the Master Plan; and would not be detrimental to the health, safety and welfare of people living or working in the area or injurious to property in the vicinity. It must be demonstrated that the variance is requested because of exceptional circumstances applying to the property involved and that literal enforcement of specific provisions of the Planning Code would result in unnecessary hardship not attributable to the owner of the property. The variance application would be the subject of a public hearing after certification of the Final EIR.

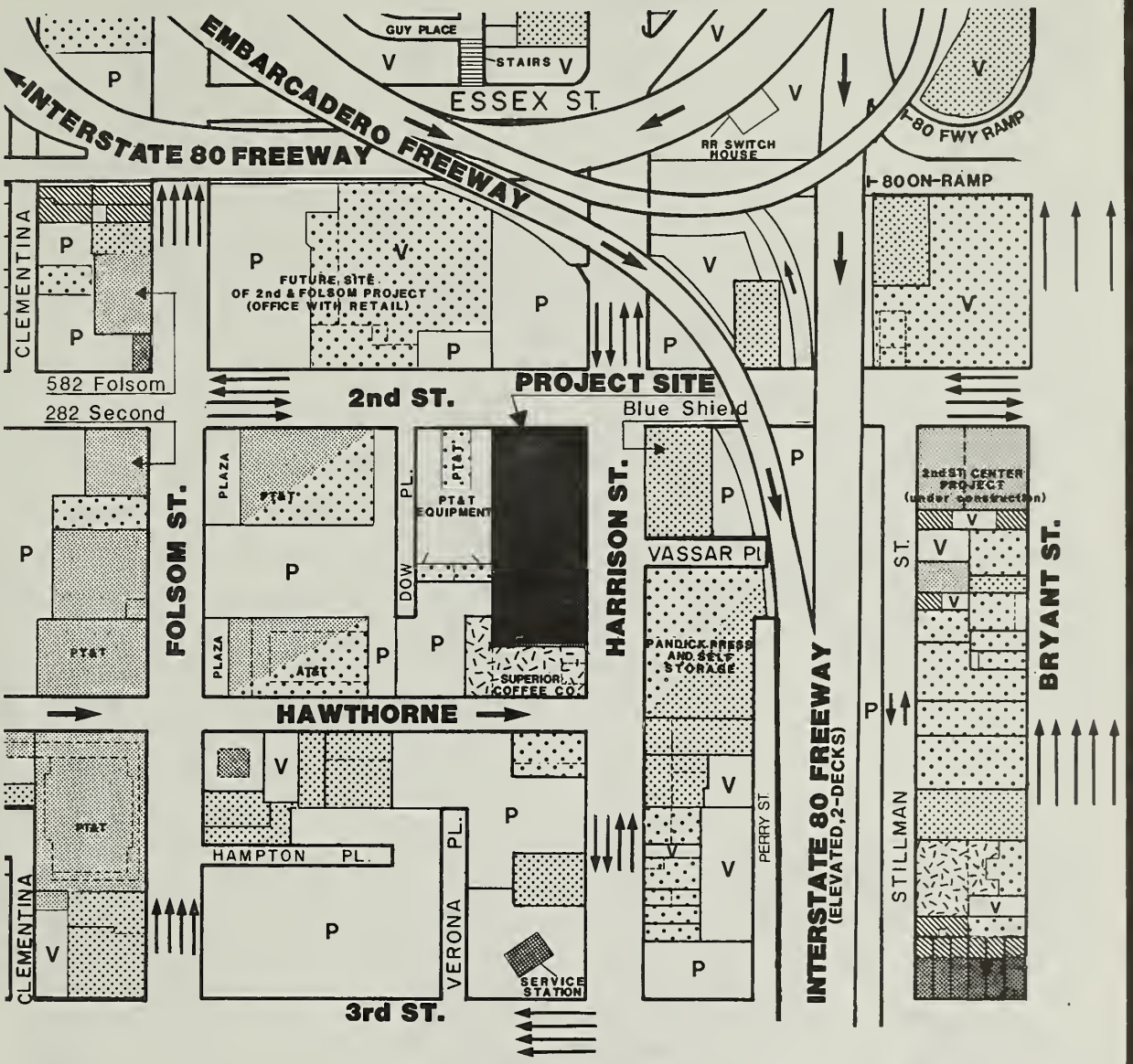
III. ENVIRONMENTAL SETTING

A. LAND USE AND ZONING

The project site is located on the periphery of the downtown business district in the South of Market area about two blocks east of the Yerba Buena Center Redevelopment area. Adjacent land use is composed primarily of offices with parking facilities, wholesale/storage, and commercial home and business services. Elevated freeway ramps curve around the project site one-half block to the east and south, forming a physical and visual barrier between the site and some surrounding land use activities (Figure 9, page 19). The project site is currently used as a 220-space surface parking lot.

The project area, once characterized by printing, wholesaling and light manufacturing uses, is now being transformed into an office and office support area. The 4-story Superior Coffee building is adjacent to the site's west side and the Pacific Telephone and Telegraph (PT&T) equipment parking lot is adjacent to the north side of the site. Further north of the site, on the southwest corner of Second and Folsom Streets, is the 18-story PT&T equipment/office building. On the southeast corner of Hawthorne and Folsom Streets is the 8-story American Telephone and Telegraph (AT&T) building. On the southwest corner of Second and Harrison Streets is the 4-story Blue Shield (400 Second Street) building. This building is now used primarily for storing files and does not contain any major office space. However, the building is currently under review by the Department of City Planning. If approved, the structure would be rehabilitated and converted to office use (see Table 4, page 55). Directly east across Second Street is the site of the recently approved Second and Folsom (Marathon) Project (EE 81.18) which will consist of two 11-and 12-story office buildings with ground-floor retail space facing a central courtyard. Several older structures nearby have recently been converted to office use, including 282 Second Street, 582 Folsom and the Second Street Center Office Renovation Project (under construction) on Second between Bryant and Stillman Streets.

The project site is in an M-1 (Light Industrial) district as shown in Figure 10, page 20. Professional and business offices, retail business or personal service establishments,



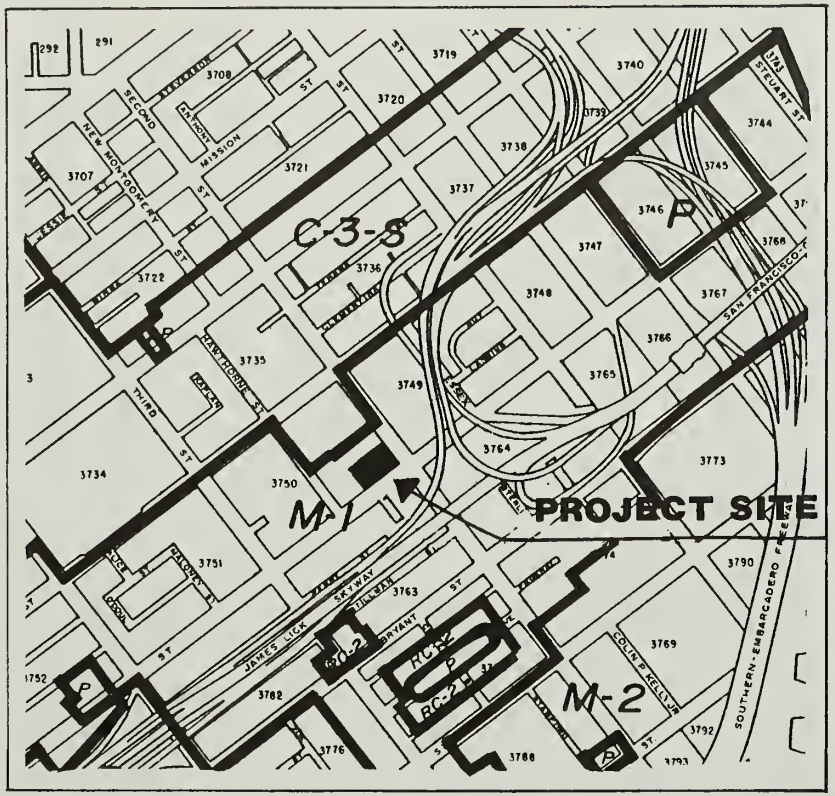
SOURCE: EIP

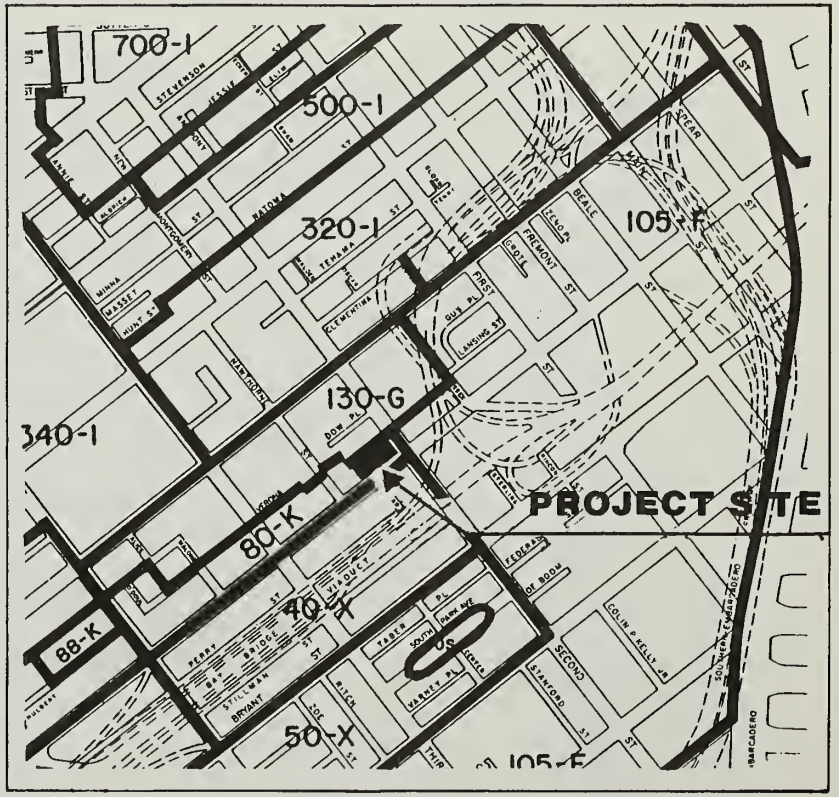
OFFICE
WHOLESALE/ STORAGE
RETAIL
HOME AND BUSINESS SERVICES
RESIDENTIAL
LIGHT MANUFACTURING
P PARKING LOT
V VACANT

SCALE 0 400 800 1200 FEET

600 Harrison Street

EXISTING LAND USE **FIGURE 9**





SOURCE: SAN FRANCISCO PLANNING CODE

ZONING DISTRICTS:

C-3-O	DOWNTOWN OFFICE DISTRICT
C-3-S	DOWNTOWN SUPPORT DISTRICT
RC-2	RESIDENTIAL-COMMERCIAL, Moderate Density COMBINED DISTRICTS
M-1	INDUSTRIAL DISTRICTS, Light
M-2	INDUSTRIAL DISTRICTS, Heavy
P	PUBLIC DISTRICTS

OS — OPEN SPACE DISTRICT

NUMBERS ARE HEIGHT LIMITS IN FEET

OO-Z ← LETTER SYMBOLS REFER TO BULK LIMITS IN CITY PLANNING CODE SEC. 270

SCALE 0 400 800 1600 FEET

600 Harrison Street

ZONING/HEIGHT AND BULK DISTRICTS

FIGURE 10

automotive sales and service, repair garages, parking lots and garages, wholesaling, storage and light manufacturing are principal uses in this district.[1]

The applicable height and bulk district for the site is 80-K, which allows a building height of up to 80 feet (Figure 10, page 20). The maximum dimensions of a "K" bulk district allow full site coverage up to 60 feet in height. Between 60 feet and the 80-foot height limit the maximum building length is 250 feet and the maximum diagonal dimension is 300 feet.

The basic floor area ratio (FAR) applicable to the M-1 District is 5:1; thus, any building on the site may contain a gross floor area of up to five times the area for the lot. In an M-1 zoning district, a floor area premium of 25% for that portion of a lot falling within 125 feet of the corner (i.e. Second and Harrison) may be added to the site area for the purpose of calculating the allowable gross floor area for the site[1] (see Table 1).

TABLE 1
FLOOR AREA CALCULATIONS

43,862.5	sq. ft.	=	Project Site Area
3,906.3	sq. ft.	=	Corner Area Premium[1]
47,768.8	sq. ft.	=	Total Lot Area for Purposes of Floor Area Computation
x 5.0		=	FAR 5:1
238,844.0		=	Total Gross Floor Area Allowed

[1] 125 ft. x 125 ft. x 25% = 3906.3 sq. ft.

In recent years the South of Market area,[2] and more generally San Francisco's industrial lands have experienced encroachment by the rapidly growing office and commercial uses.[3] The strong office demand, coupled with major non-industrial developments such as Yerba Buena Center, has caused building and land values to escalate. Estimated land values near the proposed project have increased over 300% in the last five years.[4]

Cumulative Office Development Downtown

Existing office space in San Francisco totals about 57.2 million gross square feet (see Appendix F, Table F-3, page A-56. About 8.9 million gross square feet (gsf) of office space is currently under construction. About 5.9 million gsf has been formally approved but is not yet under construction, and an additional 4 million gsf of office space is under formal review. Together these total 18.8 million gsf of new office space. About 1.5 million gsf of existing office space has been or is proposed to be demolished to clear the sites for these office developments. This results in a net addition of 17.3 million gsf of new office space in downtown San Francisco. For analysis purposes, the 17.3 million gsf of net new space is used, for it refers to the amount of new construction in excess of existing space on each site in terms of gross square feet of floor space. If these projects were all completed, San Francisco would have a total of approximately 74.5 million square feet of office space.

The above numbers and the cumulative analyses in this report are based on a list of office buildings prepared by the Department of City Planning. On January 27, 1983 each building was in one of three categories: (1) under formal review by the Department of City Planning, (2) approved but not yet under construction; or (3) under construction. These buildings and the total square feet of office and retail space in each category are listed in Appendix F, Tables F-2 and F-3, pages A-55 and A-56.

The cumulative list contains only those buildings which are, or have been, formally under review by the Department of City Planning and the Department of Public Works, or for which plans are well defined. Not included are projects which are in an early planning stage but for which details as to types of use and floor areas of office and retail space are not available. Thus excluded are buildings in the Yerba Buena Center Redevelopment Area, Mission Bay of the Southern Pacific Land Company, the Rincon Hill-South Beach Redevelopment Area, and unfunded State and Federal office building proposals. The cumulative list does contain those office buildings in the Yerba Buena Center Redevelopment Area which are under construction or for which Land Disposition Agreements have been approved, and which have definitely identified floor area figures. The San Francisco Redevelopment Agency is currently considering a range of additional amounts of office space, but the nature and scale, including floor area, are tentative and uncertain. Therefore, potential office space in Yerba Buena Center is not included. The general basis for future development will be in accordance with the Yerba Buena Center

Redevelopment Plan as amended. Hotel projects have not been included in the cumulative analyses because hotel uses have different peaking characteristics from office buildings and generally do not significantly affect peak-hour traffic or transit. The reason for this methodology is more fully explained in Appendix E, page A-41.

The totals indicated in Table F-2 may differ from those shown in earlier EIRs as they are based on the status of projects as of January 27, 1983. Some projects included in earlier totals have been removed from the cumulative impact analyses because they have been withdrawn from formal review or for other reasons of inactivity. On the other hand, some projects not included in earlier totals have been added to the cumulative totals because they have been activiated. In sum, the lists used for the cumlative analyses in this report represent to the extent practicable the most current official record of office buildings completed, in progress, or in the review process.

This discussion of cumulative development describes in static terms a fluid situation. The environmental setting is in a constant state of flux and transition.

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[1] City and County of San Francisco, Planning Code, Sections 213-227, 102.13 and 125(a), 1979 ed.

[2] The South of Market area is bounded generally by The Embarcadero, Townsend Street, the Central Skyway, Mission Street (from South Van Ness to Fourth Street) and Folsom Street (from Fourth Street to The Embarcadero). Dean Macris, Director of Planning, San Francisco Department of City Planning, Memo Regarding South of Market Interim Controls, January 26, 1982, page 4.

[3] Dean Macris, Memo Regarding South of Market Interim Controls, January 26, 1982.

[4] San Francisco Department of City Planning, Final EIR Second and Folsom Project, EE 81.18, certified April 22, 1982, page 30a.

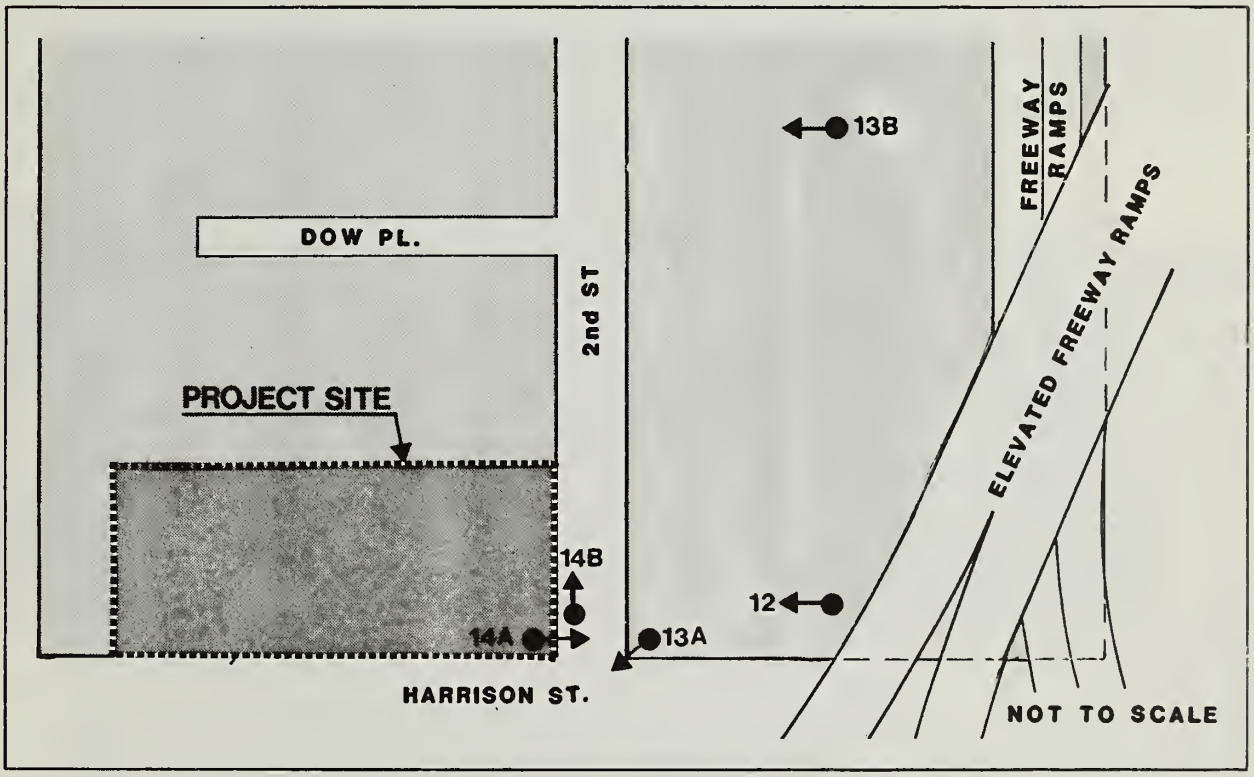
B. VISUAL QUALITY AND URBAN DESIGN

In its current use as an open-air parking lot, the project site appears unkempt, indicating a lack of maintenance; the surface paving is uneven and crumbling. A cracked concrete retaining wall averaging four feet in height lines the south boundary of the site along Harrison Street. The wall is topped with a five-foot-high chain link fence. Photographs of the project area appear in Figures 12, 13, and 14, pages 26, 27 and 28. Two advertising billboards are also located on the site (Figure 12, page 26).

Buildings of wood, brick, aluminum, stucco and concrete are prominent in the project area. Within a one-block radius of the project site, building heights may vary from 1 to 18 stories (Figure 15, page 29). Architectural styles range from the bay window Victorian design of a two-story residential structure on Folsom Street one block east of Second Street, to the smooth skin of the windowless, rectangular, silver-grey PT&T building on Second Street north of the project site (Figure 13b, page 27). The 18-story PT&T building on Second Street north of the project site is prominent because of its size. The beige four-story Blue Shield (400 Second Street) building at the southwest corner of Second and Harrison Streets retains the appearance of a warehouse due to the type and arrangement of windows and spandrels (Figure 13a, page 27).[1] The structure also is partially oriented toward the intersection because of the building's truncated corner. The beige four-story concrete Superior Coffee building is adjacent to the west side of the site and the Pacific Telephone equipment parking lot is adjacent to the north side of the site.

East of the project site, across Second Street, is an open-air parking lot where approval has been granted to Marathon Development, Inc. to construct a 12-story office building (EE 81.18). The multiple levels of freeway ramps adjacent to the Marathon site obstruct views of the Bay, and the residences and warehouses on Rincon Hill (Figure 14a, page 28). Views west, south and north from the project site are restricted by the adjacent buildings. However, high-rise buildings of the Financial District may be seen from the east end of the site along the Second Street corridor (Figure 14b, page 28).

The elevated freeway ramps are visually dominant due to their height and length. There is no visual sense of beginning or end to the ramps as they curve around the project area



SOURCE : EIP

600 Harrison Street

PROJECT AREA PHOTOGRAPHS LOCATIONS

FIGURE 11

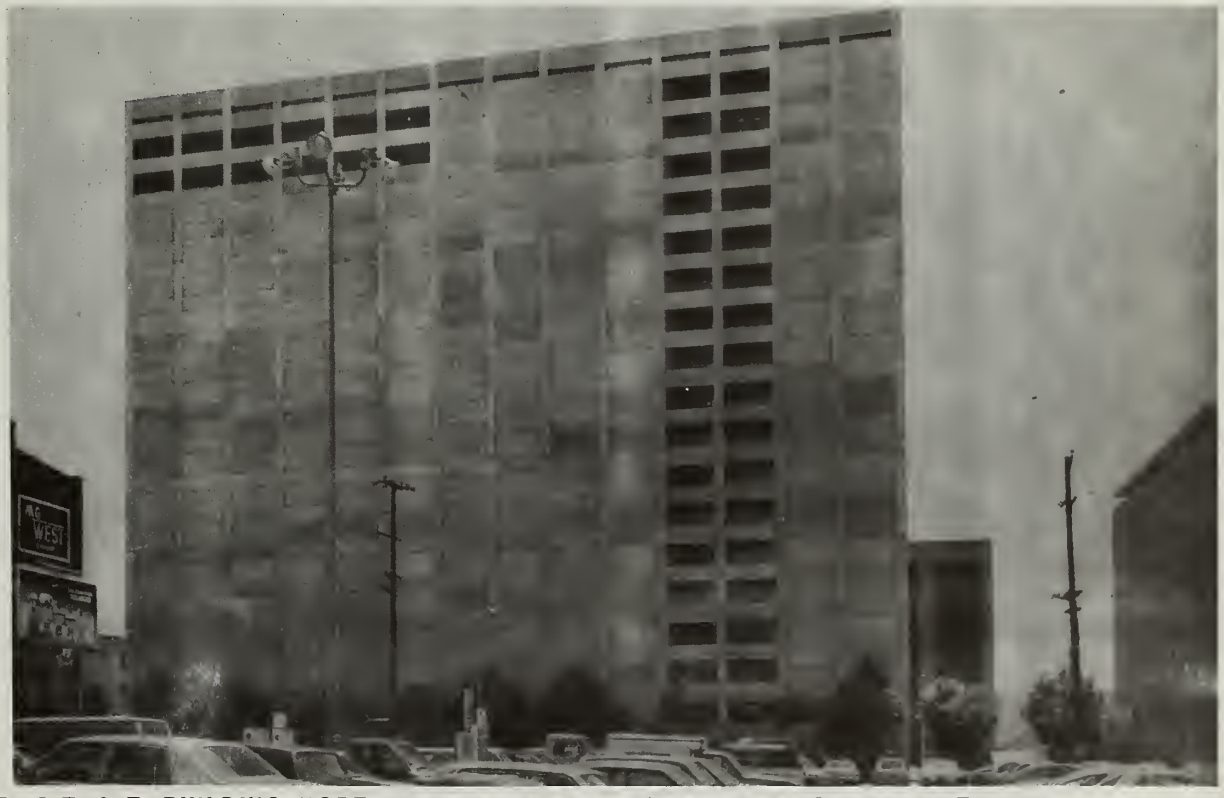
A. VIEW OF PROJECT SITE, LOOKING WEST ACROSS SECOND STREET.

SOURCE: EIP

600 Harrison Street

PROJECT AREA PHOTOGRAPH **FIGURE 12**

A. BLUE SHIELD BUILDING (400 2nd STREET), SOUTHWEST CORNER OF HARRISON AND SECOND STREETS.



B. P.T. & T. BUILDING, NORTH OF THE PROJECT SITE ON SECOND STREET.

SOURCE: EIP

600 Harrison Street

PROJECT AREA PHOTOGRAPHS **FIGURE 13**

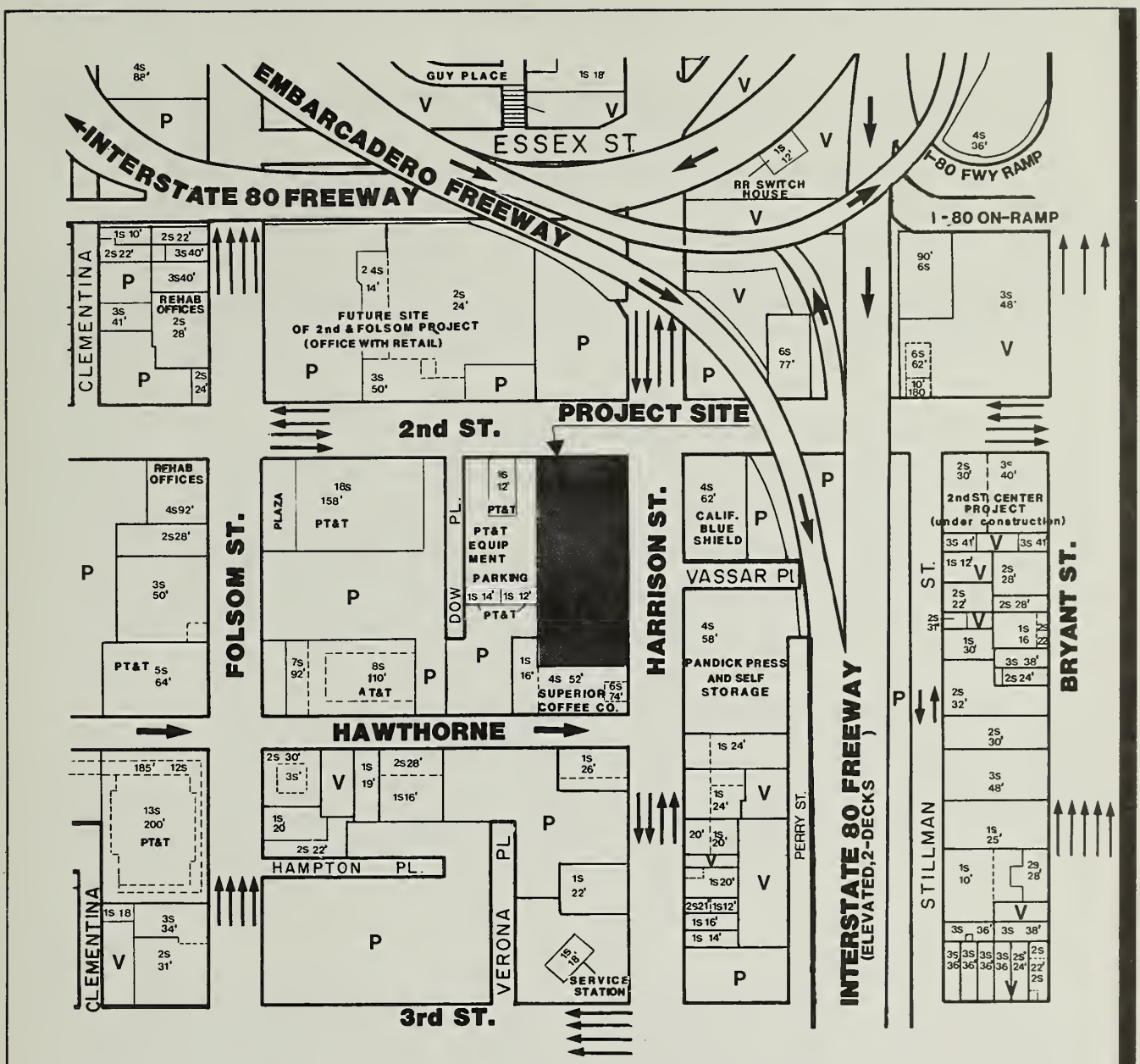
A. VIEW EAST OF ELEVATED FREEWAY RAMPS AS SEEN FROM THE PROJECT SITE.

B. VIEW NORTH TOWARD TOWARD FINACIAL DISTRICT FROM NORTHWEST CORNER OF SECOND AND HARRISON STREETS.

SOURCE: EIP

600 Harrison Street

PROJECT AREA PHOTOGRAPHS **FIGURE 14**



SOURCE: EIP

Stories and Elevation Above Grade

P PARKING

V VACANT

SCALE 0 400 800 1200 FEET

600 Harrison Street

BUILDING HEIGHTS IN PROJECT VICINITY

FIGURE 15

to the east and south. The ramps rise above most of the buildings in the area and impart a sense of enclosure to the project area. The only trees near the project site are the sycamore trees along the curb of Second Street adjacent to the PT&T building.

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[1] Spandrel: In a multi-story building, a panel-like area between the top of a window on one level and the sill (base) of a window in the story above.

C. EMPLOYMENT, HOUSING AND FISCAL FACTORS

1. Employment

The project site presently contains a self-service parking lot which sustains no full-time on-site employment. The site is located in the area south of Market Street which is adjacent to the Financial District of San Francisco. Office employment now represents more than half of all Bay Area jobs, and accounted for 60% of Bay Area and City employment growth during the 1970s.[1]

During the past two years (through September 1982), the vacancy rate for office space in the downtown has increased from 0.1% to about 3.6%.[2] The city-wide office vacancy rate was 3.69% in July 1982.[3] Over the previous five years the office vacancy rate citywide fell dramatically, so the 1981-1982 trend represents a change in the market.[3] This change may in fact be a result of the nationwide recession that has restricted demand; it also reflects the additional supply of space constructed in recent years.

About 17.3 million square feet of office space are currently proposed or under construction but not occupied in San Francisco. Of this space, 3.6 million is still under formal review, 5.1 million has been approved and an additional 8.6 million is under construction. Table F-1 in Appendix F, page A-52, shows the specific projects which are included in these numbers.

2. Housing

There are about 322,000 housing units in San Francisco, according to the 1980 census. About two thirds of the stock is rented and one third is owner occupied. Housing production in the City (as measured by building permits issued) has heavily favored multi-family housing. Between 1978 and 1980, 84% to 87% of building permits were for multi-family housing and in 1981 that figure increased to 95%.[4]

The nature of the multi-family housing stock (including townhouses, condominiums and apartments) in the City is changing because of conversion of rental units to condominiums and conversion of residential hotels to other uses. Under the Subdivision Code, the City allows conversion of 200 units of rental housing to condominiums per year, about 40% of which have been estimated to be owner-occupied.[5] It is further estimated that from 1975 to 1980, approximately 3,700 residential hotel units were demolished or converted to commercial or tourist uses.[6]

There are a number of indications that housing demand in San Francisco has heightened over the past decade. The number of households increased from 1970 to 1980 by 1.3%, despite a 5.6% decrease in total population. This reflects a decrease in the size of households in San Francisco from 2.34 persons to 2.19 persons, which is typical of many areas during this time.[7] Although the number of housing units in the City increased by 1.9% over this period, by 1980 the vacancy rate, which indicates the balance between housing supply and demand, remained low at 0.56% for owner-occupied housing and 2.68% for rental housing.[8]

The percentage of San Francisco's employed population which works in the City has decreased from more than 80% in 1970 to 75% in 1980. This suggests that fewer people who are finding work in the City are also finding housing here. However, the number of San Francisco residents working in the Financial, Insurance and Real Estate (FIRE) sector increased during this period by more than 6,000. This represents about 33% of the total increase for jobs in this sector of the City.[9] The Department of City Planning assumes that as many as 40% of office workers would desire to move to San Francisco upon finding work in the City.

The average market value of a single-family house in the Bay Area was $144,100 in 1982; the 1982 average in San Francisco was $148,200. San Francisco experienced the greatest increase in average market value of all Bay Area cities over the past five years.[10] According to the 1980 census, rents average in excess of $300.

The expansion of downtown office space is one of the main sources of pressure on San Francisco's housing demand. There are also regional housing impacts. There were just over two million housing units in the nine-county Bay Area in 1980. About one third of the units are in the East Bay (Alameda and Contra Costa counties), about one third on the Peninsula (San Mateo and Santa Clara counties) about 16% percent in San Francisco, 10% in the North Bay (Marin and Sonoma counties) and 6% in Solano and Napa counties.[11]

The limited information available on housing production in the Bay Area counties suggests that the markets have been depressed in recent years. Regionally, single-family permits declined in 1979, 1980 and 1981. Alameda, Contra Costa, San Francisco, San Mateo and Sonoma county single-family permit issuances rose from 1978 to 1979, but then declined in 1980. Regional multi-family rental unit permits have declined every year between 1977 and 1981. Conversely, condominium permits increased between 1977 and 1980 and then decreased in 1981.[12]

3. Fiscal

The current assessed value of the project site (Block 3750, lot 73) is $1,688,568. At the 1982-83 tax rate of $1.17 per 1% of assessed value, the site generates $19,800 in property tax revenues.[13] About $16,900 of this amount accrues to the City and County of San Francisco.

The existing parking use on the site generates $12,500 in annual parking taxes to the City and about $175 annually in City business taxes.[14]

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[1]Association of Bay Area Governments (ABAG) and the Bay Area Council, San Francisco Bay Area Economic Profile, December 1979, pages 37-48.

[2]Coldwell Banker, Office Building Real Estate Data, September 1982. This source provides downtown office vacancy rates only.

[3]BOMA of San Francisco, The BOMA Newsletter, July 8, 1982. This source provides citywide office vacancy rates.

[4]ABAG, San Francisco Bay Area Housing Activity Report, No. 4, May 1982, page 21.

[5]San Francisco Department of City Planning, Condominium Research, Preliminary Progress Report, December 1981.

[6]San Francisco Department of City Planning, A Study of the Conversion and Demolition of Residential Hotel Units, December 1980, page 17.

[7]Department of City Planning, Statistical Update on Citywide Office Development, May 1, 1981.

[8]U.S. Bureau of the Census, 1980 Census Information, File STF 1-A, Report #4, March 1982, Tables 25 and 26.

[9]U.S. Bureau of the Census, Population Census 1970 and 1980, and County Business Patterns 1970 and 1980.

[10]Real Estate Research Council of Northern California, Northern California Real Estate Report, Vol. 33, No. 1, April 1981. The Federal Home Loan Organization reports an average of $127,000 for purchase of housing (new or used, single or multi-family) in the third quarter of 1981. San Francisco Examiner, November 15, 1981.

[11]ABAG, Census '80 Data Profile: 1980 Detailed Regional Housing Profiles, Berkeley, April 1980.

[12]ABAG, San Francisco Bay Area Housing Activity Report, No. 4, May 1982.

[13]Of the total tax, $16,900 represents the maximum allowable under Proposition 13 for general governmental expenditures, and $2,900 was levied to finance bond obligations previously approved by the electorate (1% plus 0.17% of assessed valuation).

[14]John Wagner, Business Manager, APCOA, Inc., telephone conversation, December 22, 1982.

D. TRANSPORTATION, CIRCULATION AND PARKING

1. Street System

As shown in Figure 2, page 9, the project site generally has freeway accessibility to/from the East Bay and Peninsula. The most direct freeway access is at the I-80 on- and off-ramps along Harrison and Bryant Streets. There is another off-ramp from the East Bay along Fremont Street. Peninsula access includes the I-280 ramps on Third Street south of the site between Townsend and Berry Streets. Automobile accessibility to/from the North Bay is less direct and therefore subject to a more dispersed travel pattern. The most probable routes for North Bay travel are via The Embarcadero (to Broadway, Bay, etc.) or via Interstate 80 or surface streets to the U.S. Highway 101 corridor (Van Ness, Franklin, etc.).

The local street network (Figure 16, page 36) is characterized by the major east/west routes of Howard, Folsom, Harrison and Bryant Streets and the major north/south access routes of Fremont, First, Second, Third and Fourth Streets. The Transportation Element of the San Francisco Comprehensive Plan designates the foregoing streets (with the exception of Harrison) as Major Thoroughfares in the project area.[1]

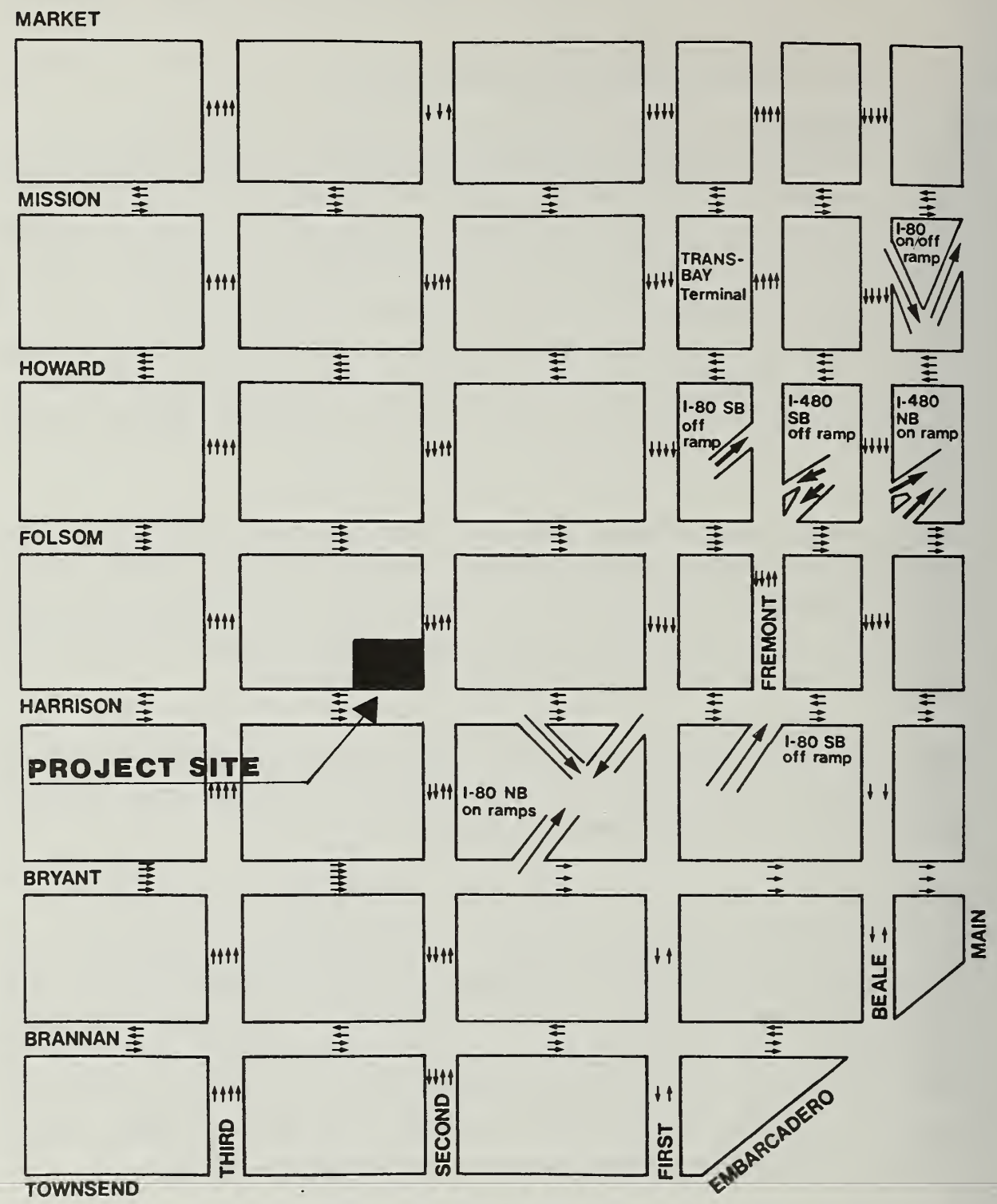
The Transportation Element also designates Mission, Fremont, First, Second, Third and Fourth Streets as Transit Streets in the project area. By definition, priority is given to transit vehicles over automobiles on these streets.

2. Transit

Transit routes in the vicinity of the project site are shown in Figure 17, page 37. Local service is provided by the San Francisco Municipal Railway (Muni) (see Table 2, page 38) and regional service is available via AC Transit (AC), Golden Gate Transit (GGT) and San Mateo County Transit (SamTrans), which all serve from the Transbay Terminal; Caltrain, serving the Peninsula from the Southern Pacific (SP) depot at Fourth and Townsend; Greyhound, serving from their depot at Seventh and Mission and BART, which is accessible on Market Street providing service to the Peninsula and East Bay.

3. Parking

A parking occupancy review has been compiled for the area within 2,000 feet of the site (bounded by Market, Townsend, Main and Fourth Streets and The Embarcadero).[2] Within this area, about 8,270 public spaces are available in 66 off-street parking facilities (see Figure 18, page 41). The average occupancy (at midday) for the various facilities is



SOURCE: EIP

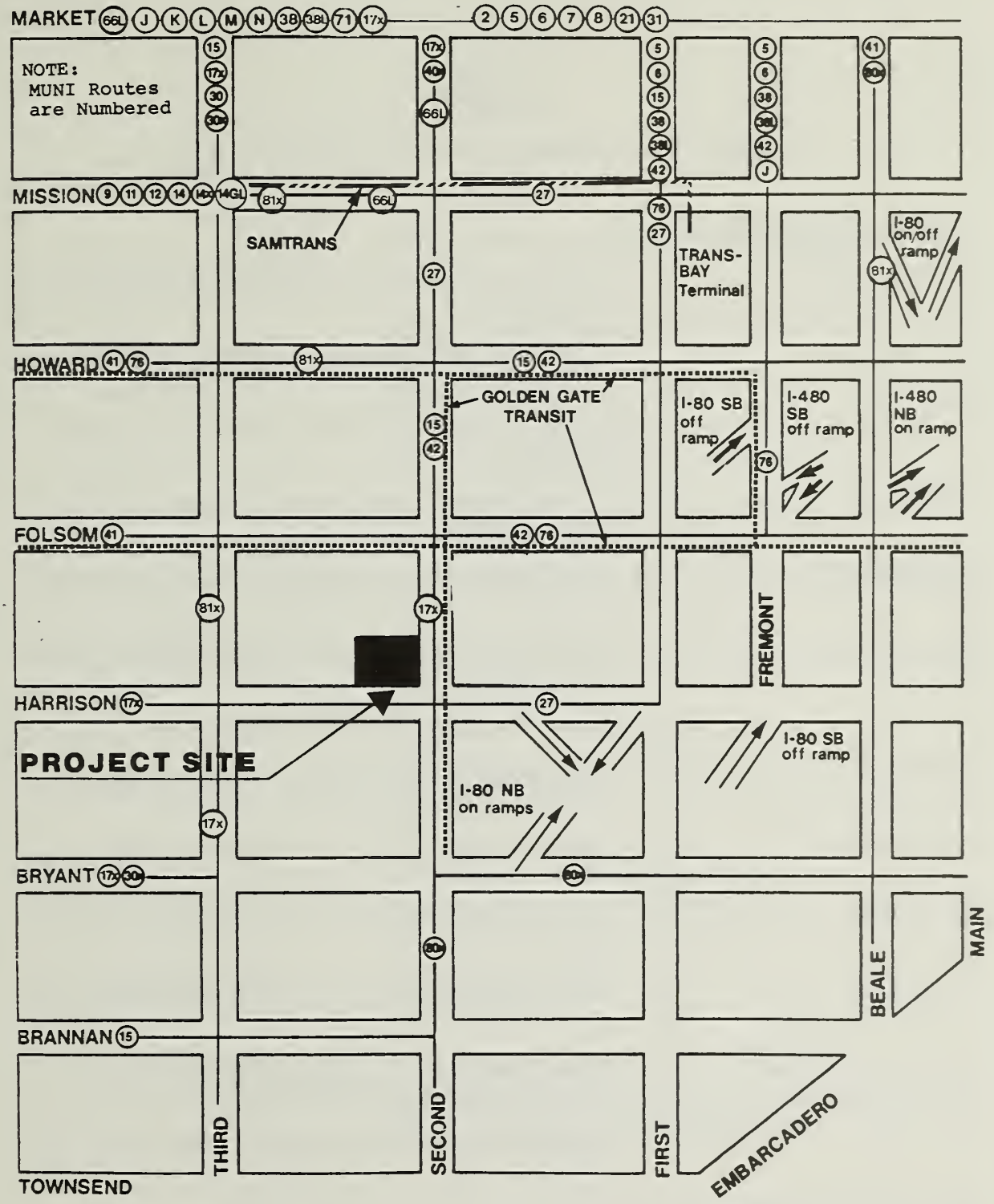
Not To Scale

NUMBER AND DIRECTION OF TRAFFIC LANES

FREEWAY RAMP DIRECTION

600 Harrison Street

TRAFFIC AREA NETWORK **FIGURE 16**



SOURCE:EIP

Not To Scale

FREEWAY RAMP DIRECTION

MUNI ROUTE

SAMTRANS ROUTE

GOLDEN GATE TRANSIT ROUTE

600 Harrison Street

TRANSIT ROUTES **FIGURE 17**

TABLE 2

MUNI ROUTES WITHIN 2,000 FEET OF PROJECT SITE

ROUTE DESIGNATION	
1 - California	Links Downtown with Western Addition and Richmond District
2 - Clement	Links Downtown with Western Addition and Richmond District
3 - Jackson	Links Downtown with Pacific Heights and Western Addition
5 - Fulton	Links Downtown (and Transbay Terminal) with Richmond District
6 - Parnassus	Links Downtown (and Transbay Terminal) with Sunset District
7 - Haight	Links Downtown with Haight-Ashbury District, weekdays only
8 - Market	Links Downtown with Castro/Market area
9 - Richland	Links Downtown with Mission and Bernal Heights, weekdays only
11 - Hoffman	Links Downtown with Upper Market area, peak periods only
12 - Ocean	Links Downtown with outer Mission and City College areas
14 - Mission	Links Downtown with Mission, outer Mission and Daly City
14GL & 14X - Mission	Links Downtown with outer Mission and Daly City, express and limited-stop only
15 - Third	Links Fisherman's Wharf, Downtown, Bayview and City College
17X - Park Merced Express	Freeway express service to Downtown from Park Merced area
21 - Hayes	Links Downtown with Richmond District

TABLE 2
(continued)

ROUTE DESIGNATION	
27 - Noe	Links Downtown with Mission and upper Noe Valley
30 - Stockton	Links Downtown with S.P. Depot, North Beach and Marina area
30X - Freeway Express	Freeway express service linking Downtown with McLaren Park area
31 - Balboa	Links Downtown with Richmond District
32 - Embarcadero	Links Downtown and South of Market with Aquatic Park, daytime only
38 - Geary	Links Downtown with Western Addition and Richmond District
38L - Geary Limited	Express and limited-stop service linking Downtown with Richmond District
41 - Union	Links Downtown with Western Addition
42 - Downtown Loop	Links Downtown with Train Depot, Civic Center and Fisherman's Wharf
66L - Quintara	Limited stop service linking Downtown with Parkside
71 - Haight-Noriega	Links Downtown with Haight and Sunset, weekday peak periods only
80X - Gateway Express	Links Golden Gateway Center with Downtown and S.P. Depot
81X - Caltrans Express	Links South of Market area with Train Depot
J,K,L,M,N Muni METRO	Light-rail service linking Downtown with upper Noe, Sunset, Parkside and Ingleside Districts

approximately 98%. With normal space turnover, this rate represents capacity of the parking facilities.

There are no on-street truck loading zones adjacent to the project site on Second and Harrison Streets.

The project site is an existing surface parking lot with approximately 220 spaces. Parking spaces are poorly marked and range in width from six feet to eight feet six inches (minimum accepted width is eight feet for compact parking spaces for uses other than residential).[3] The lot is currently occupied by 200 vehicles during the mid-day peak occupancy period.[4] Of the parked vehicles, 45 have monthly passes and 155 pay a daily rate of $2.50.

4. Pedestrian Access

The project site is served by adjacent sidewalks and crosswalks at the Second and Harrison intersection. Pedestrian counts were conducted during midday and p.m. peak periods (Figure 19, page 42). All of the adjacent facilities were found to have average pedestrian flow conditions which are generally "open"[5] during the peak periods. During the peak five minutes of the p.m. peak period, however, the crosswalk across Harrison operates with "unimpeded" flow conditions.

5. Bicycle Access

In the vicinity of the project site (within 2,000 feet), the Transportation Element of the City's Master Plan has designated Market Street, Brannan Street and The Embarcadero as bicycle routes. None of these streets have designated bicycle lanes in the project vicinity.[6]

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[1] Major Thoroughfare: a cross-town street whose primary function is to link districts within the City and to distribute traffic from and to the freeways; a route generally of city-wide significance. Defined in the Thoroughfare Plan of the Transportation Element of the San Francisco Comprehensive Plan.

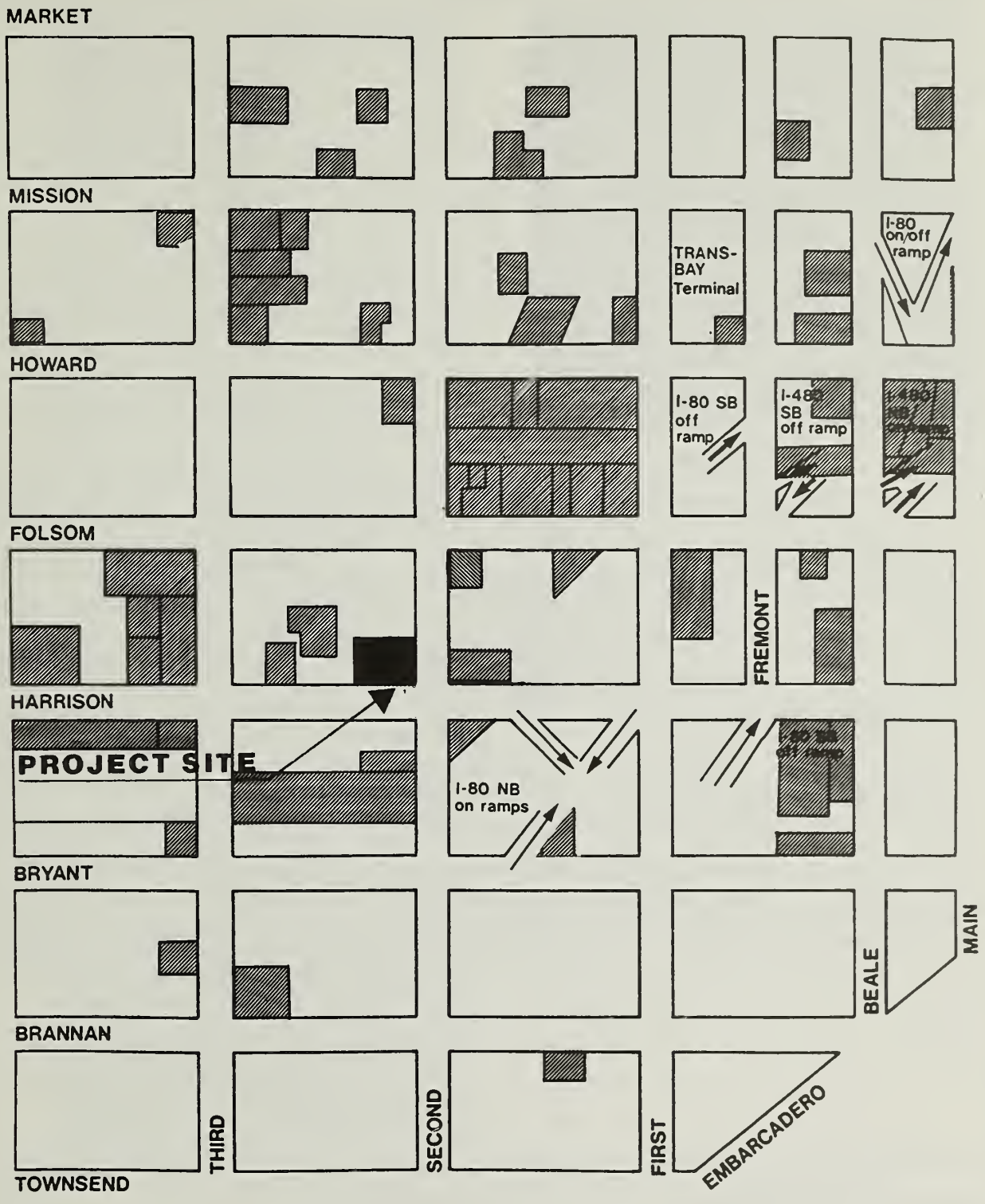
[2] Field review by EIP Corporation on January 13, 1983.

[3] San Francisco Department of Public Works, "Requirements for Passenger Car Parking," March 3, 1976.

[4] Field review by EIP Corporation on March 11, 1983.

[5] A discussion of pedestrian flow definitions is found in Appendix B, Table B-1, page A-25.

[6] Russell Lee, Traffic Engineering Division, Department of Public Works, telephone conversation, October 23, 1981.



SOURCE:EIP

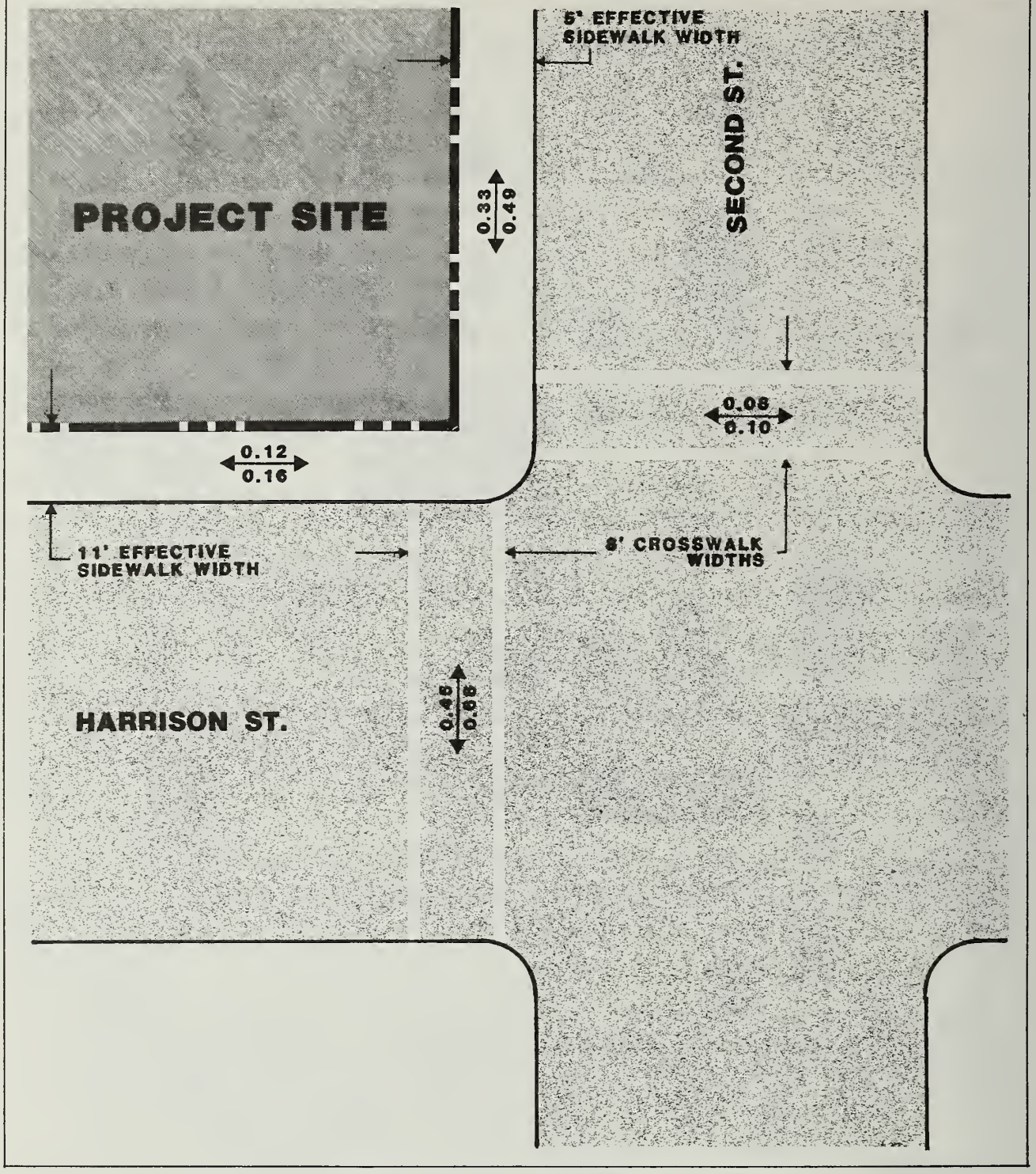
FREEWAY RAMP DIRECTION

SURFACE PARKING LOTS

Not To Scale

600 Harrison Street

PARKING SURVEY **FIGURE 18**



SOURCE: EIP

PEAK MID-DAY FLOW RATE
PEAK P.M. FLOW RATE

Flow rates are pedestrians per minute per foot of walkway width

Flow rates of up to 0.5 reflect "open" pedestrian conditions. A rate of 0.5–2 represents "unimpeded" conditions. Complete pedestian flow definitions are included in the appendices.

Not To Scale

600 Harrison Street

PEDESTRIAN FACILITIES AND EXISTING FLOW CONDITIONS

FIGURE 19

E. AIR QUALITY AND CLIMATE

1. Air Quality

San Francisco's persistent summer winds and its upwind position with respect to major pollutant sources continue to give it possibly the cleanest air in the Bay Area. Despite these advantages, there are periods, usually in fall and winter, when the air becomes stagnant. At these times the entire Bay Area has poor air quality. In 1980 the State and federal standards for total suspended particulates (TSP) were exceeded in San Francisco; in 1981, only the State standard for suspended particulates was violated. In 1980 and 1981 other measured pollutants were all below the standards (see Appendix H, page A-63).[1,2]

In addition, a special monitoring program called a "Hotspot" program was conducted at 100 Harrison Street during the winter 1980-81 (five blocks northeast of the proposed project). The observed high eight-hour average carbon monoxide (CO) concentration was 7.8 parts per million (ppm), which is 1.2 ppm less than the applicable air quality standard of 9 ppm.[3]

Because the air quality standards are not met in all areas of the Bay Area, the Air Quality Plan for the Bay Area, as part of the Environmental Management Plan (EMP) and State Implementation Plan (SIP) for California, has been prepared by the Association of Bay Area Governments (ABAG) and other governmental agencies.[4] This Plan contains a strategy for the long-term attainment and maintenance of the air quality standards. It includes measures to reduce emissions from stationary sources and automobiles and suggests transportation measures to reduce automobile emissions. The air quality problems addressed in the Air Quality Plan are photochemical oxidants, carbon monoxide, and suspended particulates.

The plan has been revised to adjust the strategies for attainment of air quality standards by 1987.[5] This effort focused on updating plan assumptions, reviewing implementation of adopted controls and analyzing and recommending new controls. The revisions address carbon monoxide and ozone air pollution issues.

2. Climate

The climate of San Francisco is dominated by the sea breezes characteristic of marine climates and there are few extremes of heat and cold. The warmest month is September, with an average daily maximum of 69 degrees; the coolest is January, with an average daily maximum of 56 degrees. The prevailing wind direction in San Francisco is westerly. Southwesterly and northwesterly winds are also frequent. The project site is exposed to prevailing westerly winds. This may change, as development of the Yerba Buena Center increases the density of buildings upwind. The site is mostly sheltered from southwest and northwest winds by existing buildings.[6]

3. Shadow Patterns

Existing shadows on pedestrian areas near the project site are from the PT&T and AT&T buildings to the north and from low-rise buildings west and south of the project site. The existing project site does not cast any shadows since it is an open parking area.

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[1]Bay Area Air Quality Management District, Air Currents, Vol. 25, No. 3, San Francisco, California, March 1982.

[2]Bay Area Air Quality Management District, Air Currents, Vol. 24, No. 3, San Francisco, California, March 1981.

[3]Association of Bay Area Governments, AQMP Tech Memo 40, "Results of the 1980/1981 Hotspot Monitoring Program for Carbon Monoxide", Berkeley, California, January 1982.

[4]Association of Bay Area Governments, 1979 Bay Area Air Quality Plan, Berkeley, California, January 1979.

[5]Association of Bay Area Governments, et. al., 1982 Bay Area Air Quality Plan, Draft for Public Review, Berkeley, California, July 1982.

[6]Donald Ballanti, Certified Consulting Meteorologist, Wind Impact Evaluation for the Proposed Second and Harrison Building, San Francisco, October 5, 1982, 3 pages, reproduced as Appendix C (page A-33) of this EIR.

F. NOISE

The noise environment in the vicinity of the project site is dominated by traffic noise from Second and Harrison Streets and the Embarcadero Freeway. To determine typical daytime noise levels in the vicinity of the project, noise measurements were made on Tuesday, September 7, 1982 at the three locations shown in Figure 20, page 46. The existing noise levels form a data base against which construction noise levels can be compared and impacts assessed. The results of the noise measurements are shown in Table 3, page 47. As can be seen from the table, noise levels are highest on Harrison Street and lowest at locations removed from traffic. Typical maximum noise levels on the south side of Harrison Street, in front of the Pandick Press and Self Storage Warehouse (location no. 1), range from 78 to 86 dBA[1] when trucks and buses go by. Typical maximum noise levels in the vicinity of the one-story Pacific Telephone building adjacent to the north boundary of the project site range from 67 to 75 dBA for interiors of offices farthest from Second Street. Typical maximum noise levels outside of the AT&T building located at the intersection of Hawthorne and Folsom Streets range from 60 to 70 dBA outside of the facades facing the construction site.

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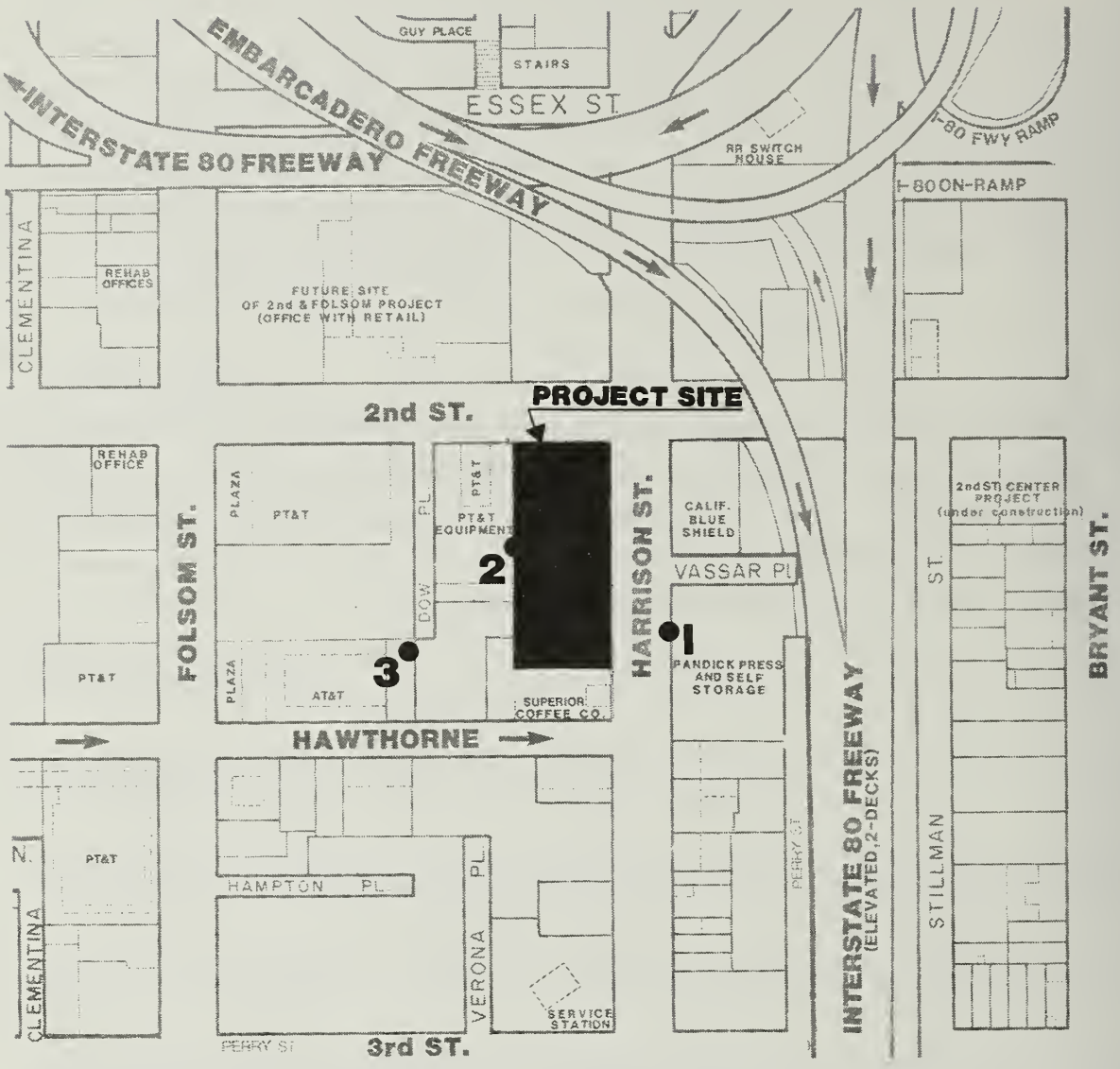
[1] A complete discussion of acoustical concepts is found in Appendix D, page A-37.



SOURCE : CHARLES M. SALTER ASSOCIATES INC.

SCALE 0 400 800 1200 FEET

600 Harrison Street

NOISE MEASUREMENT LOCATIONS **FIGURE 20**

TABLE 3

NOISE MEASUREMENTS

Location	Day and Time of Measurement[1]	L_1[2]	L_{10}	L_{50}	L_{90}	L_{eq}[3]	Noise Sources
1. In front of 645 Harrison, 7 ft. from warehouse facade	9/7/82 Tuesday 2:22-2:37 p.m.	79	72	66	61	69	Traffic on Harrison, trucks, buses, and autos; max. levels to 86 dBA.
2. At northerly property line of site, 125 feet from the center of Second St.	9/7/82 Tuesday 2:44-2:59 p.m.	67	64	62	60	62	Traffic on Second St. and on the Embarcadero Freeway; max. noise levels to 75 dBA.
3. In UCB parking lot at north fence near the southeast corner of the AT&T office building	9/7/82 Tuesday 3:03-3:18 p.m.	66	63	60	59	61	Traffic on Second, Folsom, Harrison and the Embarcadero Freeway; max. noise levels to 70 dBA.

[1]Noise measurements were taken in mid-afternoon to typify average daytime noise levels.

[2]The sound level in dBA that was equalled or exceeded 1 percent of the time; L_{10}, L_{50}, and L_{90} are the levels equaled or exceeded 10, 50 and 90 percent of the time, respectively.

[3]The L_{eq} is the equivalent steady-state sound level that, in a stated period of time, would contain the same acoustic energy as the varying sound level during the same time period.

Source: Charles M. Salter Associates, Inc.

G. ENERGY

Pacific Gas and Electric Company supplies energy to San Francisco customers. Electrical energy is generated from various sources of energy including: oil, gas, hydroelectric, geothermal, nuclear, wind, cogeneration and solid waste.[1] In future years PG&E expects to generate electricity from these sources and from coal.

The proportion of energy generated from oil and gas is expected to decrease by 1990 with corresponding increases in the proportion of energy generated from the other sources listed above.[2]

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[1]Pacific Gas and Electric Company, 1981 Annual Report, San Francisco, California, 1982.

[2]Pacific Gas and Electric Company, 1980 Annual Report, San Francisco, California, 1981.

H. HISTORIC AND CULTURAL RESOURCES

The San Francisco peninsula was once inhabited by the Costanoan Indians, a gathering and hunting people who lived a semi-sedentary village life. There are several known archaeological sites within a quarter mile of the project area, which is, therefore, in an archaeologically sensitive area.[1] A prehistoric shellmound was discovered one block southwest of the site during construction of a building in 1929. An isolated find, an obsidian scraper of aboriginal manufacture, was retrieved from a test boring at the Moscone Convention Center two blocks northwest of the project site. The lack of associated materials has not made it possible to evaluate the significance of this find.

The shoreline of San Francisco Bay was once about three blocks east from the project site. The 1853 U.S. Coast Survey Map shows two structures located on Second Street between Folsom and Harrison. The U.S. Coast Survey Map of 1859 indicates that the project lot was not developed.

The South of Market area was a warehouse district and residential area early in San Francisco's history. The area between Market Street and Rincon Hill was known as Happy Valley. This neighborhood dated back to 1849 and was described as being a large tent settlement housing people waiting to go to the gold mines. As the tents disappeared and houses were constructed, the working class settled in the small alleys: Tehama, Clementina, etc.; the middle class on Mission, Howard and Folsom; and the rich built homes on Harrison and Second and on Rincon Hill. Rincon Hill was one of early San Francisco's most desirable neighborhoods. Its exclusive characteristics were lost in 1869 when the hill was lowered by 50 feet and Second Street was extended.[2] The 1905 Sanborn Insurance Company maps, located at the San Francisco Water Department, indicated that the line of perpendicular cut through Rincon Hill traversed the southwest portion of the project site. No structures existed on the site at that time.

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[1] Arlyn Golder, Staff Archaeologist, Regional Office, California Archaeological Site Survey, letter, May 18, 1981.

[2] Olmsted, Roger, et al., Yerba Buena Center, Report on Historical Cultural Resources for the San Francisco Redevelopment Agency, August 1977, page 34.

I. GEOLOGY AND SEISMICITY

The project site is at elevation 42 feet (San Francisco Datum).[1] There is a slight downward slope to the southwest along the Harrison Street frontage, creating a difference in elevation of about ten feet. General slope down from Harrison Street toward Folsom Street is less than two percent.

The site is underlain by bedrock which is exposed along Hawthorne Street.[2] Bedrock in the area consists of six feet of hard, strong Franciscan Formation sediments (sandstone) overlying highly sheared and fractured Franciscan Formation sediments (shale).[3] The shale increases in strength and hardness with depth but is not as solid as the sandstone.[4] These sediments are considered to have good stability under earthquake conditions.[5]

There are no active faults on the proposed project site. An inactive fault atop Rincon Hill is approximately 0.2 mile east of the site;[6] no known historic ground failures are directly associated with this fault.[7] There are four major fault zones in the San Francisco Bay Area capable of causing strong ground motion at the proposed project site.[8] The San Andreas and Seal Cove Faults are located off the Pacific shore approximately nine miles and 14 miles, respectively, from the project site. The Hayward and Calaveras Faults are approximately 10 and 20 miles east of the site. Each of these systems is considered active and is capable of generating a large earthquake (greater than magnitude six on the Richter scale)[9] during the projected useful lifetime of the structures at this site (at least 50 years).

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[1] The San Francisco Datum is approximately 8.6 feet above mean sea level.

[2] Site visit by EIP Geologist, April 15, 1982.

[3] Franciscan rocks are typical of the northern California Coast Ranges and underlie the hills of San Francisco. They consist of a mixture of dark muddy sediments, red, green and brown cherts and lava flows of black basalt, all material laid down on the floor of the Pacific Ocean about 100 million years ago. Cherts are rocks formed by deposits of silica containing microorganisms, which are transformed into hard, waxy or porcelain-like rocks. See David D. Alt and Donald H. Hyndman, Roadside Geology of Northern California (Mountain Press, Missoula, Montana, 1975.) Also known as Franciscan Formation or Franciscan Assemblage.

[4] Bowers, J.P. and H.T. Taylor, Geotechnical Investigation, Second and Folsom Project, San Francisco, California, Harding, Lawson Associates, San Francisco, California, September 3, 1980, page 4.

[5]URS/John A. Blume and Associates, San Francisco Seismic Safety Investigation, San Francisco, California, June 1974, page 6.

[6]Schlocker, Julius, Geology of the San Francisco Northern Quadrangle, California, U.S. Geological Survey Professional Paper 782, 1974, Plate I, scale 1:24,000.

[7]Youd, T.L. and S.N. Hoose, Historic Ground Failures in Northern California Triggered by Earthquakes, U.S. Geological Survey Professional Paper 993, Washington, D.C., 1978, 177 pages.

[8]California Division of Mines and Geology; Fault Map of California, Data Map Series No. 1, 1975, scale 1:750,000.

[9]Richter scale: a logarithmic scale developed in 1935 by Charles Richter to measure earthquake magnitude by the energy released, as opposed to earthquake intensity as determined by effects on people, structures and earth materials.

IV. ENVIRONMENTAL IMPACTS

A. ISSUES NOT ADDRESSED

An Initial Study was prepared for the 600 Harrison Street project to identify potential environmental issues resulting from the proposed project; these issues are covered in this EIR. Certain potential environmental issues were determined to be insignificant and are therefore not addressed in this EIR, including relocation, road construction, operational noise, odors or burning of materials, utilities and public services (except for cumulative effects on fire protection services), biology, surface water, health hazards and cultural resources. A copy of the Final Initial Study is attached to this report as Appendix A, page A-1.

Not all issues covered in the EIR are physical environmental impacts as defined under the California Environmental Quality Act (CEQA). They are provided for informational purposes only.

B. LAND USE AND ZONING

The proposed project would increase the density of uses on the site. The 600 Harrison Street project would be a mixed-use development containing office, retail and parking space totalling approximately 238,000 gross square feet. The project site currently contains a 220-space surface parking lot which would be demolished and replaced with the proposed structure. Office space totalling 228,000 gross square feet would be the major use of the project. There would be 10,000 gross square feet of retail space on a portion of the ground floor. Parking for 116 cars would be provided in one level of subsurface parking.

The proposed structure would be 80 feet high and cover approximately 39,000 square feet of the project site. The building would conform to existing height and bulk limitations for the site.

The proposed project would replace the existing surface parking lot with an 80-foot high office building of about 238,000 gross square feet at an effective FAR of approximately 5:1. The proposed project would conform with allowable floor area ratios for the project site.

The proposed project would cumulatively contribute to new and proposed development occurring in the South of Market area. There are several objectives and policies of the Commerce and Industry Element of the Comprehensive Plan of San Francisco which relate to the project area and the proposed project.[1]

> Objective 2, Policy 1: "Seek to retain existing commercial and industrial activity and to attract new such activity to the City."

The proposed project would be responsive to a policy of continued office development in San Francisco generally and in the Second Street area specifically. Land use along Second Street in the vicinity of the proposed project is emerging as a secondary office development corridor. Secondary office development consists mainly of businesses which

cannot afford top rent levels and are either displaced from existing downtown core locations or are priced out of the downtown office market. Department of City Planning records indicate that as of November 1982, eight projects totalling 1,126,200 gross square feet of office space were recently approved or under construction and four projects (including the proposed project) were under formal review by the City along Second Street between Mission and Townsend Streets, as shown in Table 4, page 55. Cumulative transportation impacts associated with the proposed project and the Second Street office development corridor are addressed in Section IV.E., Transportation, page 79.

Objective 4, Policy 5: "Avoid encroachment of incompatible land uses on viable industrial activity." The discussion of this policy states that "another potential problem results from the proximity of the growing office core to smaller scale business and industries in the South of Market area. Growth of the downtown office core should be carefully guided to avoid unnecessary relocation."

Objective 6, Policy 2: "Guide location of office development to maintain a compact downtown core so as to minimize displacement of other viable uses."

With accelerated demand for office growth in close proximity to the downtown Financial District, encroachment into adjacent industrially zoned areas is also occurring at an accelerated rate. While industrial migration is evident, many South of Market firms are relocating to sites within the City. Between 1976 and 1981 industrially-occupied space increased 300,000 square feet in the South of Market area, indicating that industrial activity is still a viable land use in the area.[2]

The proposed project would not displace any existing industrial land uses. It would displace a parking lot which is considered a commercial land use. Although the proposed project would not be consistent with potential industrial land uses, it would be consistent with principal permitted office and retail uses in an M-1 district and commercial land uses which are existing or approved within the project area.

TABLE 4

SECOND STREET OFFICE DEVELOPMENT[1]
(Between Mission and Townsend Streets)

Projects Approved/Under Construction	Office Gross Square Feet: Total New Construction	Office Gross Square Feet: Net New Construction
2nd and Folsom (Marathon Project)	681,700	681,700
490 2nd at Bryant (c)	40,000	40,000
480 2nd at Stillman (c)	35,000	35,000
95 Hawthorne (UC Bank Extension) (c)	61,900	61,900
123 Townsend at 2nd	104,000	49,500
144 2nd at Minna	30,000	30,000
625 2nd at Townsend (c)	157,000	157,000
690 2nd at Townsend (c)	16,600	16,600
Total	1,126,200	1,071,700
Projects Under Review		
615 2nd at Brannan (c)	90,000	70,000
640 2nd	39,000	39,000
400 2nd at Harrison (c)	71,500	49,500
600 Harrison at 2nd (proposed project)	228,000	228,000
Total	428,500	386,500

[1] As of November 1982.

(c) = Conversion (industrial and/or warehouse to office)

[1]San Francisco Department of City Planning, Commerce and Industry Element Policies and Objectives, adopted by the City Planning Commission, Resolution 8001, June 29, 1978.

[2]Letter from Thomas Tabor, Coldwell Banker, Inc. to Barbara Morrison, Economic Development Council, Office of the Mayor, June 19, 1981.

C. VISUAL QUALITY AND URBAN DESIGN

The visual and design characteristics of the proposed project would be derived from its physical layout; the size, shape and height of the building; construction materials used and landscape development. The Urban Design Plan, an element of the Comprehensive Plan of the City and County of San Francisco, sets out principles and policies for the guidance of new major development.[1] There are several policies contained in the Urban Design Plan which relate to the project area and the proposed project.

Major New Development Policy 5: "Relate the height of buildings to important attributes of the City pattern and to the height and character of existing development."

Major New Development Policy 6: "Relate the bulk of buildings to the prevailing scale of development to avoid an overwhelming or dominating appearance in new construction."

The proposed project would generally respond to Major New Development Policies 5 and 6. Although there are a number of buildings over six stories high in the project area (Figure 15, page 29), at the present time the prevailing pattern of development is low-rise (two to four stories) commercial and industrial buildings which cover most or all of their sites. Visually, the building bulk would be reduced because of offsets in the building's exterior walls. The offsets would contain balconies, windows and a recessed main pedestrian entry adjacent to Harrison Street. Portions of the building's upper floors would also be stepped inward, reducing apparent bulk (Figures 3, 4 and 8, pages 10, 11 and 15). The building would be five stories high where it is adjacent to the Superior Coffee building on Hawthorne Street. The sixth story would be recessed about 60 feet from the Superior Coffee building (Figure 8, page 15).

The building would be 12 stories shorter than the adjacent PT&T building, and six stories shorter than the proposed Second and Folsom structure across Second Street east of the project site. The building setbacks at the upper floors would visually relate to the upper level setbacks of the proposed Second and Folsom building. The building setbacks would assist in providing a transition in bulk between the project and existing smaller structures.

Conservation Policy 6: "Respect the character of older development nearby in the design of new buildings.

Major New Development Policy 1: "Promote harmony in the visual relationships and transitions between new and older buildings."

Major New Development Policy 2: "Avoid extreme contrasts in color, shape and other characteristics which will cause new buildings to stand out in excess of their public importance.

Major New Development Policy 7: "Recognize the special urban design problems posed in development of large properties."

Currently, exterior surfacing materials and colors are being studied by the project architect. An objective of the building's design would be to establish visual compatibility with structures in the project area. Although surface materials for the proposed project are still under consideration textures and colors would be diversified to reduce the apparent scale of the building's facade and create an impression of several smaller adjacent buildings[2] (See Figure 3, page 10). The design features would respond in part to Major New Development Policy 7. The exterior detailing and window size of the structure would be similar to the window size and detailing of older low-rise structures in the area. The structure would reflect the simpler lines of existing buildings in the project area, in response to Major New Development Policies 1 and 2 and Conservation Policy 6.

Neighborhood Environment Policy 12: "Install, promote and maintain the landscaping in public and private areas."

Neighborhood Environment Policy 13: "Improve pedestrian areas by providing human scale and interest."

The proposed project would respond to Neighborhood Environment Policies 12 and 13. A landscaped terrace would be provided at the sixth level adjacent to the Superior Coffee building (see Figure 8, page 15). Ground level commercial space would be provided within the building along Second and Harrison Streets. Views from sidewalk areas would be available toward interior commercial spaces, affording visual interest to pedestrians. Street trees would be installed along portions of Second and Harrison Streets (Figure 6, page 13), which would help relate the scale of the structure to the scale of the pedestrian environment.

Sidewalk paving of brick or concrete with an exposed grid pattern of lines would provide visual interest. An atrium over the lobby would extend through the fourth floor, letting light into the building's interior.

Neighborhood Environment Policy 14" "Remove and obscure distracting and cluttering elements."

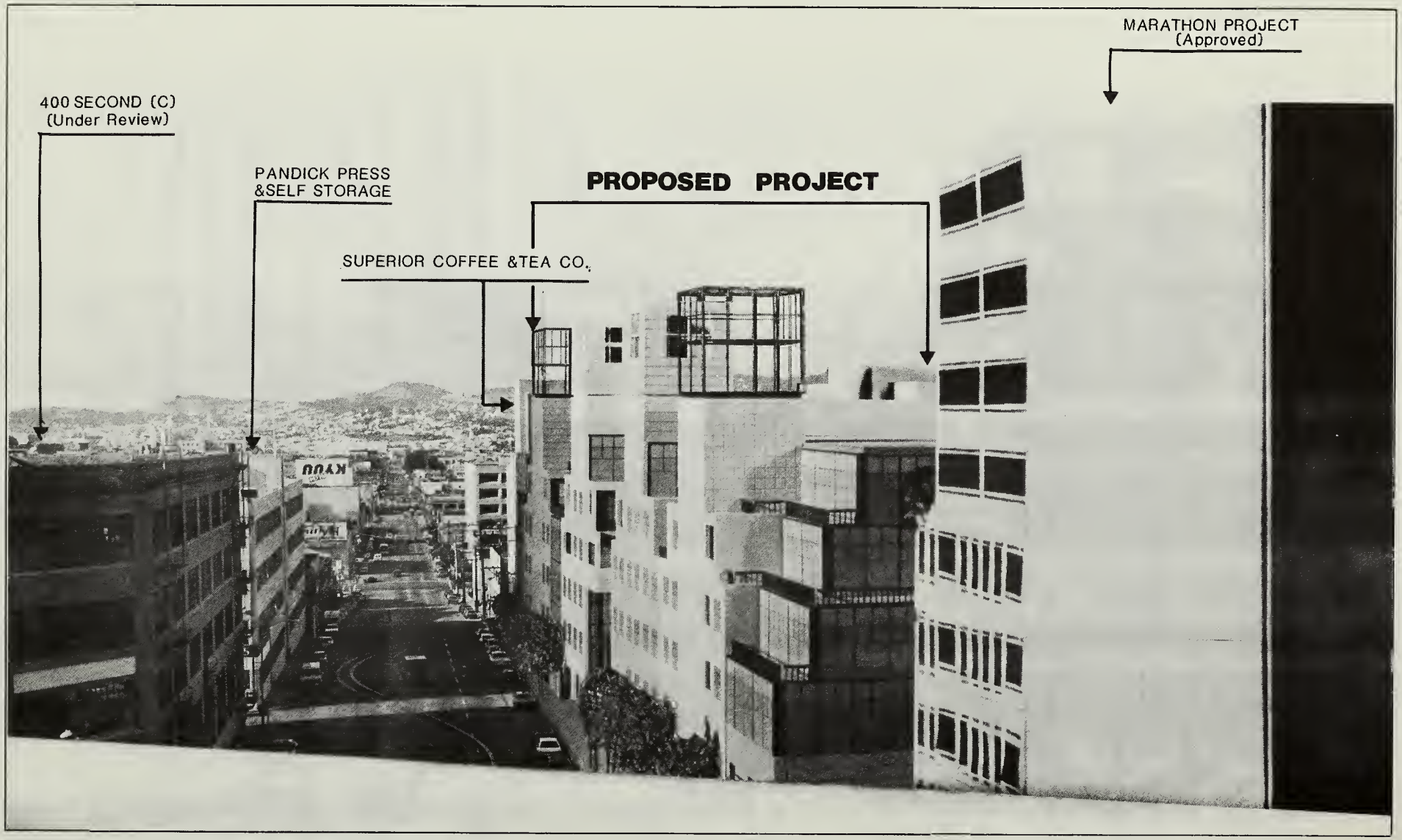
The proposed project would respond to Neighborhood Environment Policy 14, which focuses specifically on exposed parking and signs. It would remove a visible surface parking lot and two billboards currently on the project site prior to construction of the proposed project. The existing surface paving, retaining wall and chainlink fencing adjacent to Harrison Street would also be removed, improving the appearance of the project site. The proposed project would provide parking in sub-surface facilities, out of public view.

City Pattern Policy 1: "Recognize and protect major views in the city, with particular attention to those of open space and water."

City Pattern Policy 3: "Recognize that buildings, when seen together, produce a total effect that characterizes the City and its districts."

The proposed structure would relate to City Pattern Polices 1 and 3 in terms of cumulative impacts. The overhead freeways offer views of the City in an overall context. The building would momentarily obstruct a portion of views west to travelers using the lower levels of the elevated ramps. Construction of the Second and Folsom project at a maximum height of 130 feet, would momentarily screen views toward the 600 Harrison Street site and increase view obstruction to those persons who would travel past the site on the elevated freeway ramps (see Figure 21, page 60). Upper floors of the project would provide views of portions of the Financial District and other surrounding areas of San Francisco that would not be obstructed by buildings adjacent to or near the project site.

The project would be noted as an infilling of open land, increasing the density of construction in the South of Market area. The project, in an incremental way, would also be seen as a structural element tapering downward from the higher skyline profile of



(C) = CONVERSION

SOURCE: SQUARE ONE FILM & VIDEO, SAN FRANCISCO

600 Harrison Street

PHOTOMONTAGE LOOKING WEST ON HARRISON ST. FROM EMBARCADERO FREEWAY **FIGURE 21**

buildings along Market Street and in the Financial District (see Figures 22 and 23, pages 62 and 63).

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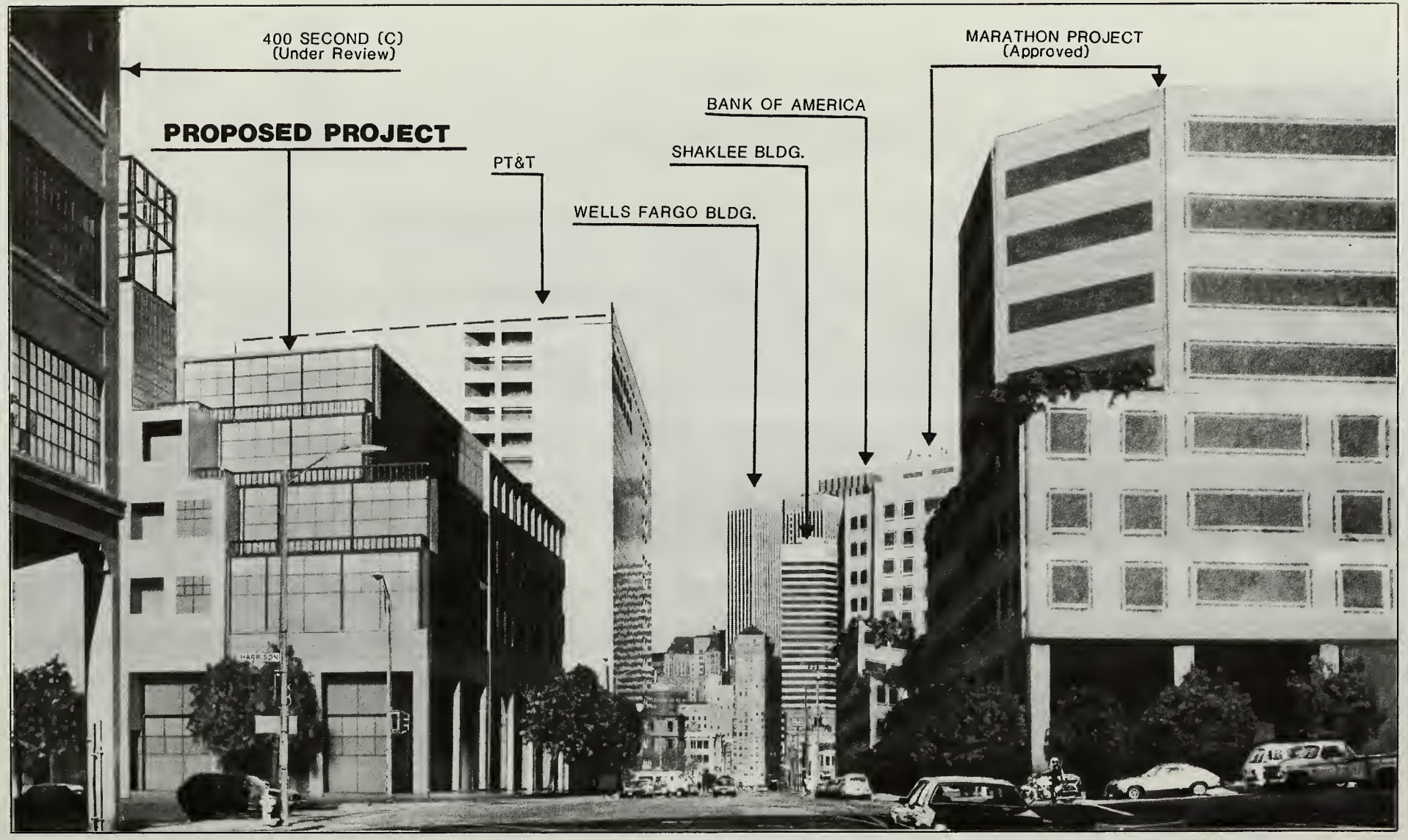
[1]San Francisco Department of City Planning, Urban Design Plan, adopted by Resolution 6745 of the San Francisco City Planning Commission, August 26, 1971.

[2]Carl Kinczel, Tai Associates/Architects, telephone communication, August 18, 1982.



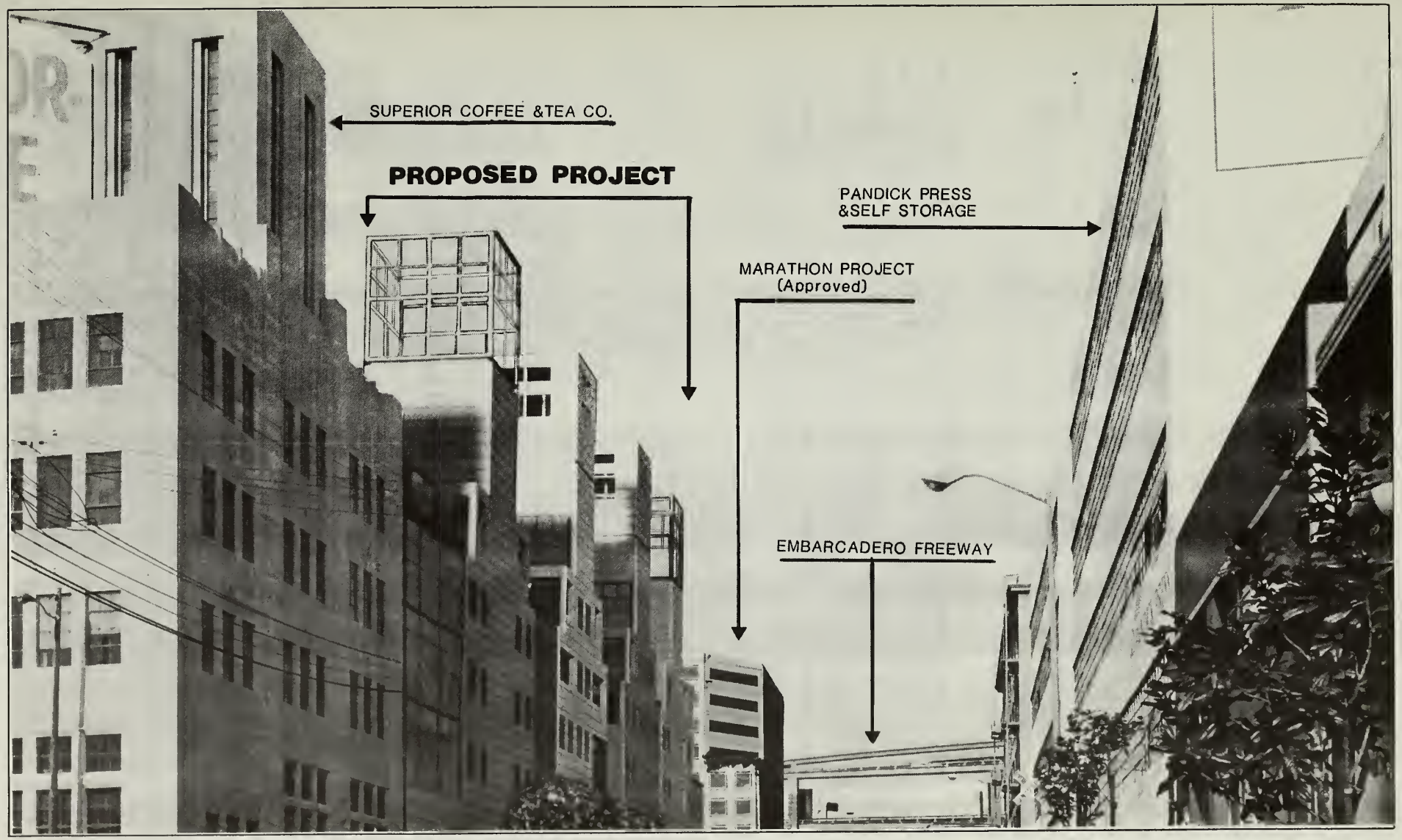
(C) CONVERSION

SOURCE: SQUARE ONE FILM & VIDEO, SAN FRANCISCO

600 Harrison Street

PHOTOMONTAGE LOOKING NORTH ON SECOND STREET NEAR HARRISON STREET

FIGURE 22



SOURCE: SQUARE ONE FILM & VIDEO, SAN FRANCISCO

600 Harrison Street

PHOTOMONTAGE LOOKING EAST ON HARRISON STREET AT HAWTHORNE STREET

FIGURE 23

D. EMPLOYMENT, HOUSING AND FISCAL FACTORS

1. Employment

At full operation the project would provide about 950 permanent jobs for office, retail and janitorial maintenance functions. These would include about 910 office workers (at one worker per 250 square feet of office space for 228,000 square feet), 30 retail workers (at one worker per 350 square feet for 10,000 square feet), and nearly 10 janitorial/service workers (at one worker per 30,000 square feet for the entire building).[1]

The jobs generated by the proposed project would create additional Bay Area employment through a multiplier effect. Assuming that the new jobs created as a result of the project were primarily in the finance, insurance and real estate industries, about 1,010 additional jobs in other sectors of the Bay Area economy could result. Table 5, page 65 shows the distribution of this secondary employment by sector. The multiplier encompasses the entire Bay Area and the specific number of additional jobs in San Francisco as a result of the multiplier effect is not possible to calculate.

The total number of permanent new Bay Area jobs that would be supported by the project's addition to the stock of downtown office space would be about 1,960 (950 direct jobs plus the 1,010 jobs induced by the multiplier).

Construction activities are expected to take about one year and generate about 310 person-years of construction labor.[2] As a result of the multiplier effect of project construction, about 480 additional person-years of employment would be generated in the Bay Area.[3] Some of this secondary employment would be in San Francisco, although it is difficult to estimate the amount.

2. Housing

The project would increase the demand for housing in San Francisco. According to the City Planning Commission's Office Housing Production Program (OHPP), the housing requirement for the project would be 202 units.[4] This estimate assumes that 40% of the 910 new office workers will reside in San Francisco and that there are 1.8 office workers per household containing San Francisco office workers.

TABLE 5

SECONDARY EMPLOYMENT DISTRIBUTION
IN THE BAY AREA AS A RESULT OF
THE MULTIPLIER EFFECT

Sector	Employees
Agriculture and Primary Processing	25
Construction	62
Manufacturing	127
Transportation, Communications, Utilities	104
Trade	196
Finance, Insurance, Real Estate	162
Services and Government	333
TOTAL	1,010[1]

[1]Total does not add due to rounding.

Source: EIP, based on Cooperative Extension Service, University of California, Berkeley, San Francisco Bay Area Imput-Output Model 1967-1974, August 1978. The figures presented in this table assume that the jobs in the project would be primarily in the FIRE and retail sectors.

The relationship between downtown office growth and housing demand in San Francisco was documented in a report prepared by Recht Hausrath and Associates, Economists, which appears as Appendix C, pages 289 through 329, of the 101 Montgomery Street EIR, certified by City Planning Commission Resolution 8941, May 7, 1981. This report is available for public review at the Office of Environmental Review, 450 McAllister Street, fifth floor, and is hereby incorporated by reference into this EIR pursuant to Section 15149 of the California Environmental Quality Act (CEQA) guidelines.

This study estimated that 15% to 30% of the people newly employed in San Francisco as a direct result of the downtown office projects would move to San Francisco and that there are an average of 1.4 San Francisco workers in each San Francisco household which contains downtown workers. Under these assumptions, the project would have a demand for about 98 to 195 households moving into San Francisco.[5] The study further concluded that most people cannot afford housing costs in the City despite relatively high wages and employment opportunity.

The housing stock in the City is expanding, but not at a rate adequate to accommodate the needs of all the employees who work in San Francisco. Many factors, including job growth, land availability and interest rates have affected housing affordability both in the City and the Bay Area. Low and moderate income households have been especially impacted as the tight market has led middle-income households to compete with low and moderate income households for the same housing stock.[6] Household income in San Francisco grew less than the rate of inflation over the past decade and is lower than in other counties such as Contra Costa and Santa Clara.[7] If workers from these areas move into the City, residents on fixed incomes with relatively large households could be at a disadvantage in terms of their ability to afford housing. However, there are no specific data available on the nature of population turnover in the City due to changes in housing costs.

Based on available data, an approximation of a housing affordability analysis appears in Appendix G, Table G-2, page A-60. Data in the table rely on published sources of office worker incomes (not household income), and prices of housing (without regard to housing availability). Assumptions are made regarding ratio of housing expenses to income, mortgage interest rates and down payments. Analysis based on these data and

assumptions indicates that most project employees would not be able to afford ownership housing in San Francisco, although a significant minority, depending on the number of workers per household, would be able to do so. Most project employees, except the lowest-paid clerical employees desiring to live alone, would be able to afford rental housing in San Francisco.

3. Housing Affordability

While the above data suggests the relationships between employee income and housing costs, a substantial analysis of housing affordability would require, first, determination of the number of households generated by the project preferring to live in San Francisco. This figure, in turn, would be related to new employment increase and residence location preference. As new office space would be primarily occupied by existing San Francisco businesses that would relocate, most new workers already would be employed in San Francisco. Those project workers transferring from another place of employment within the City would not generate housing demand directly attributable to the project; thus projections of housing demand attributable to the project must subtract workers already employed in San Francisco.

The project would permit new employment to occur in San Francisco, but not all employees in the project would be new to San Francisco. Some firms could move from older buildings in the City into the project. This would permit other employees to move from outside the City into these older buildings. Since tenants for the project are not known, it is impossible to predict which buildings would be vacated by the project (and which buildings then would be vacated to fill this vacated space, and so on). Employee movements are dynamic; all employees new to the City attributable to the project would not be directly employed within the project. For the above reasons, it is not possible to quantify precisely the number and type of new employees which would work in San Francisco due to the project.

The projected regional distribution of project employees is contained in Appendix G, Table G-1, page A-59. Where an employee would live is the result of individual decision-making. Such decisions are a function of location preference and housing economics. Information concerning housing preferences would be obtainable through surveys of new office workers. Preference information is complex, involving many factors such as number of bedrooms, type of neighborhood, family composition, and commute distance to work.

Assuming that the number of new employees and their preferences for housing were known, the most critical variable affecting the housing affordability analysis would be a new household's ability to pay for housing. The salary of new workers alone is insufficient to determine housing affordability; the total income of all members of a new worker's household must be known. A variety of published sources give salaries for various occupational categories, but no comprehensive data regarding the distribution of household income among office workers (or any other group of workers) exists. Citywide household income estimates based on the 1980 Census will become available during 1983, but this data source will not reflect household income of downtown office workers.

The ratio of housing expenses to income, according to the "Office Housing Production Program (OHPP) Interim Guidelines", January 1982, are 30% of household income for rental expenses and 38% of household income for home ownership expenses. The down payment for home ownership may be assumed to be between 10% and 20% of purchase costs; however, a household's ability to afford a down payment would depend on household assets and liabilities, and would vary widely for different households. Assumptions regarding mortgage interest rates must also be made. Considering the volatility of interest rates in recent years, an affordability analysis based on current market interest rates might not be relevant when the project is completed and occupied.

Quantification of project impacts on the housing market is not possible based on available published information. A study of the "Feasibility of Performing Housing Affordability Analysis" by Questor Associates (June 15, 1982) concludes that household income of project employees, distribution of housing demand, and magnitude of new demand can only be accurately determined by surveying occupants of buildings comparable to an office project. The study states that without such detailed information, "it is not feasible to quantify with reasonable accuracy the housing affordability parameters associated with new office construction."

4. Cumulative Development

The 228,000 square feet of office space proposed for the project would constitute about a 1.3% increase over the 17.3 million square feet of net new office space currently under construction (8,557,050 square feet), approved (5,090,200 square feet), or under formal review (3,610,320 square feet). A list of the projects included in these totals is presented in Appendix F, Table F-1, page A-52.

If all 17.3 million square feet of office space were to be completed by 1990, there could be a short-term cumulative impact of oversupply while the market adjusts itself to absorb the new space. During this period, commercial rents would be expected to decline, especially in the core of the downtown area, and vacancy rates would rise. The number of proposed new office developments could decline if there is not sufficient demand for office space presently planned or under construction, and for office space that will become available due to existing leases that will expire.

Office workers employed by the project would contribute to the cumulative impact of office development upon City and regional housing demand. Table G-1, Appendix G, page A-59, indicates that project demand would range from 0.2% to 0.3% of projected housing growth from 1982 to 1990. The household cumulative housing demand shown in Table G-1 is based on the list of downtown office projects presented in Table F-1, Appendix F.

The impact of cumulative downtown office development (see Appendix F, Table F-1, page A-52) on the housing market would be mitigated to a certain extent because various office developers have agreed to provide units, through City Planning Commission final approval resolutions, or have proposed units on-site. The proposed project includes the provision of 202 off-site dwelling units in accordance with OHPP guidelines. Cumulative office development would increase the City's current high ratio of jobs to housing supply. Housing demand would increase in an already tight housing market. In market situations where demand outstrips supply, prices can be expected to increase.

Factors independent of office development and outside the control of the City, for example immigration, interest rates, State and federal tax policies, and economic trends, also influence the housing market. Quantification of the effects of cumulative office development on San Francisco housing prices is not possible.

The new demand could be accommodated through additions to the housing stock, increases in the number of office workers per household, and/or displacement of existing residents. Large additions to the San Francisco housing stock are not anticipated in the near future because the housing construction industry has declined due to high costs and high interest rates. Census data indicates that the number of people per household has historically been declining. This demographic trend will probably not reverse itself in the next few years due to a variety of factors, including divorces and separations, departure of young adults from families, and the increasing proportion of elderly population.

5. Fiscal

a. Revenues

The proposed project would generate revenues from property tax, business tax, utility users tax, and sales tax. These revenues are summarized in Table 6, page 71.

Assessed Valuation and Property Tax. Based on replacement costs, the fair market value of the proposed project would be about $35,000,000.[8] Subtracting the assessed value of the existing land and improvements on the property site, which total about $1,689,000, the net addition to the San Francisco property tax base would be about $33,311,000. Net annual property taxes would be about $1,390,000 based on the 1% of full market value maximum tax levy allowed under Proposition 13, plus an additional levy of 0.17% of full market value for repayment of bonds previously approved by the electorate. (The current total rate for the 1982-83 fiscal year is 1.17% of full market value.) It is not known at present how the property taxes would be distributed at the time the project is completed; however, applying the 1982-83 rate, San Francisco would receive about $332,000 (85.2% of the total composite property tax revenues). Table 7, page 72 presents the distribution of net property tax revenues to the appropriate agencies.

Business Tax. The business tax is actually comprised of two taxes: gross receipts tax and payroll tax.[9] Revenues from these taxes would be generated by businesses occupying the project and by owners of the project who would pay a tax on the rents they receive. Business tax revenues have been estimated at $487,000 for every million square feet of office space.[10] Therefore, annual business tax revenue from the office space in project would be about $111,000 (in 1982 dollars). Based on projections of gross receipts, it is estimated that the retail businesses in the project would pay about $4,000 total in business taxes, for a project total of $115,000.[11]

Utility Users Tax. Utility users tax revenues are paid on the cost of electricity, gas, water and telephone use.

Electricity
2,190,000 kwh/year x $.045/kwh x $.05 tax = $4,930

Gas
72,000 therms x $.34779/therm x $.05 tax = $1,250

Water
(334,000 cubic feet water/year x $0.00414/cubic foot) plus
(334,000 cubic feet sewage/year x $.0115/cubic foot) x $.05 tax = $261.

TABLE 6

ESTIMATED REVENUES GENERATED BY THE 600 HARRISON STREET PROJECT FOR THE CITY AND COUNTY OF SAN FRANCISCO

Tax		Estimated Amount of Revenue
Property tax		$332,100
Business tax		115,000
Utility Users tax		
Electricity	$ 4,930	
Gas	1,250	
Water & Sewer	261	
Telephone	16,700	
Total	23,100	23,100
Sales tax		39,000
Total Revenues		$509,200

Source: EIP

Note: See text for description of revenues. Numbers are rounded.

TABLE 7

DISTRIBUTION OF PROPERTY TAX GENERATED TO OTHER AGENCIES
BY THE 600 HARRISON STREET PROJECT
(net of current revenues)

Agency	Property Tax Revenues
City and County of San Francisco	$ 332,000
San Francisco Unified School District	28,500
San Francisco College District	4,700
Bay Area Pollution District	400
BART	23,400
TOTAL	$ 390,000[1]

[1]Total does not add due to rounding.

Source: EIP

Telephone
238,000 square feet x $1.40 square foot x $.05 tax = $16,700

The total utility users tax would be $23,100.

Sales Tax.

$1,235,520 annual taxable purchases by employees x 1% tax = $12,400[12] The retail businesses in the project would generate an additional $26,600, for a total of $39,000 in sales tax to the City.[12]

Sales tax revenues generated by the one-half percent BART sales tax would be about $19,500. Of this total, BART would get $14,600 directly and the remaining $4,900 would be distributed by the Metropolitan Transportation Commission among BART, Muni and AC Transit.

Total Revenues. The potential increased revenues to San Francisco would be approximately $509,200; however, this figure is subject to a number of variables that could affect the estimates:

- Property tax distribution could change in future years
- Payroll tax could vary according to the salaries of the employees in the proposed project
- Rents of the office may change, thereby affecting the gross business tax
- Cost for utilities, particularly telephone, are also variable

b. Costs

Costs to San Francisco for providing municipal services to the proposed project are difficult to quantify. Most evidence indicates that overall costs per unit of service provided (per sq. ft. or per employee) to the new building would be lower than costs for the existing buildings in the area (see Appendix G, Table G-3, page A-62). This reduction in per square feet costs is primarily due to improvements in fire and security protection systems in new construction. Costs for water and sewer service would be paid through user charges.

Cost increases due to increased patronage would be expected for Muni, SamTrans, BART, and Golden Gate Transit. The City's general fund provides for a subsidy to the Municipal Railway's operating budget. The subsidy covers the difference between Muni's costs and the revenues that Muni receives from fares and from federal and state governments and represents the cost of Muni to the City. The net marginal cost (or increase in the deficit for Muni operations) per peak hour ride was $0.39 in 1982.[13] The proposed project would generate about 260 peak hour trips (see Section IV.E., Table 11, page 82) which could generate a cost to Muni of $9,100.[13] The extent to which this cost would be met by the general fund allocation to Muni is not known. State and federal funds to Muni are decreasing and the City is reviewing other options for increased revenues.[14]

It is estimated that 50 peak hour trips a day on BART would be generated by the proposed project employees. The deficit per rider for BART is estimated at $1.33.[15] Using this rate, the proposed project would generate a deficit of about $17,300. However, additional property tax and sales tax revenues generated by the project for BART would yield a surplus of $20,700 over the operating deficit.

If the same proportion of General Fund revenues historically allocated to Muni continued, it could be assumed that the proposed project revenues would exceed municipal costs directly attributed to the project at the time of occupancy. Due to limitations imposed by Proposition 13 on property tax increases, revenues might not increase as rapidly as inflationary increases in City costs. If all current sources of revenue associated with the proposed project were held constant (i.e. fees and rates do not change and no new assessment levied) costs would eventually exceed revenues.[16,17]

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[1]Office employment derived from: San Francisco Department of City Planning, Revised Guidelines for Administering the Housing Requirements Placed on Office Development under OHPP, December 7, 1981. Retail and maintenance employment derived from analysis in: 101 Montgomery Street, FEIR, certified May 7, 1981, page 77.

[2]An estimated $20,500,000 (1983 dollars) would be spent during construction. Steve Weir, Project Architect, Tai Associates/Architects, telephone conversation, September 27, 1982. Employment estimate assumes labor costs would be about 55% of the total (20,500,000 x 55% = 11,275,000), including direct wages, payroll taxes and fringe benefits, and annual cost of $36,400 per construction worker.

[3]All multipliers based on the Bay Area Input-Output Model from Cooperative Extension Service, University of California, Berkeley, San Francisco Bay Area Input-Output Model 1967-1974. This is the equivalent of a multiplier of 1.55 in that for each person-year of employment supported by project construction, an additional 1.55 person-years of secondary employment would be supported.

[4] $\frac{228{,}000 \text{ gross square feet}}{250} \times 40\% \div 1.8 = 202$ housing units

San Francisco Department of City Planning, Revised Guidelines for Administering the Housing Requirements Placed on Office Development under OHPP, December 7, 1981, page 5.

[5] Recht Hausrath Associates, "The Feasibility of Performing a Housing Affordability Analysis Relevant to Office Growth in Downtown San Francisco," July 1982.

[6] City and County of San Francisco, Report of the Citizen's Housing Task Force, July 29, 1981, pages 114 and 115.

[7] San Francisco Department of City Planning, "Summary of Recent Census Information," October 28, 1982.

[8] Steve Weir, Project Architect, Tai Associates/Architects, telephone conversation, September 17, 1982.

[9] San Francisco businesses with over $250,000-$500,000 in gross receipts (depending on which of the 15 classifications includes their firm) or over $45,450 in reported taxable payroll pay either of two taxes. The gross receipts tax is calculated by applying the rate specific to a firm's business classification to the firm's gross receipts; rates range from one dollar per $1,000 to two dollars per $1,000. The payroll tax is calculated by applying a rate of 1.1% to a firm's reported taxable payroll. Each firm is supposed to calculate its tax based on both methods and pay the larger amount of the two.

[10] Gruen Gruen + Associates, Fiscal Impacts of New Downtown High-Rises on the City and County of San Francisco, San Francisco, March 1981, page 116, and Arthur Anderson and Co., Downtown High-Rise District Cost-Revenue Analysis, November 1980, pages 35 to 38. These estimates were based on actual tax collections by the City for the C-3-0 District.

[11] Footnote 12 below suggests that the retail businesses would generate $2.66 in sales tax revenue per square foot. This equals $266 in gross receipts. The business tax calculations for retail space in this project is as follows:

$266 x 10,000 square feet x .0015 tax rate $3,990.

[12] Based on information presented in 101 Montgomery FEIR EE 80.26, certified May 7, 1981, page 83.

Sales tax revenue per one square foot of commercial space is estimated to be $2.66 based on an estimated 3,097,000 square feet of commercial area in the C-3-0 District and 1980-1981 allocation of $8,250,000 in Sales Tax Revenue (Gruen Gruen + Associates, page 111, City and County of San Francisco Appropriations Ordinance (1980-1981) and Arthur Andersen & Company, Table 11-4).

[13] Bruce Bernhard, "The Marginal Cost of Peak Muni Passenger Trips per Unit of Office Space," San Francisco Utilities Commission, February 1981. 90 x $.39 x 260 working days a year = $9,100.

[14]Bruce Bernhard, San Francisco Public Utilities Commission, conversation, January 18, 1982.

[15]Department of City Planning , 101 Montgomery FEIR, EE 80.26, certified May 7, 1981, page 42, 50 rides x 260 working days x 1.3 = $17,300.

[16]101 Montgomery Street FEIR, EE 80.26, certified May 7, 1981, Appendix C, pages 316 to 318.

[17]In addition, the project sponsor may be required to pay a one-time Transit Impact Fee. This fee requires developers of office projects in San Francisco to contribute to a fund to finance the incrased coss of Muni services necessitated by their projects on the rate of $5 per gross square foot of new construction. The legality of this Ordinance is being challenged and currently pending in San Francisco Superior Court. If the fee is actually administered at the $5 rate, the project could yield $1,190,000.

E. TRANSPORTATION, CIRCULATION AND PARKING

1. South of Market Area (SOMA) Travel Surveys

During Fall 1982, extensive travel surveys were conducted with employees in the South of Market area (SOMA) bounded by Folsom, Berry and Ninth Streets, and The Embarcadero.[1] (The project sponsor contributed 36% of the funds for this survey effort.) Using a cluster sampling methodology, about 7% of the estimated 26,000 workers in SOMA were given questionnaires. Travel characteristics and mode of travel were established for the area as a whole and four sub-areas. The project site lies within sub-area 2 of SOMA. Sub-area 2 is bounded by Folsom, Bryant, Fourth and The Embarcadero. Employee travel modes within the sub-area containing the proposed project are shown in Table 8, page 78.

The SOMA surveys generally reveal a much higher auto usage than is experienced in the downtown area. Current data indicate that 36% of downtown employees commute by auto. About 60% of those surveyed in SOMA are auto commuters. This higher ratio of auto use is probably a result of two factors. First, transit service to SOMA is neither as comprehensive nor as direct as the service enjoyed by the downtown area. In addition, SOMA contains off-street parking which is both reasonably priced and available (SOMA employees pay an average of $2 daily for parking), as well as on-street parking which is unregulated. These factors tend to discourage transit usage and encourage auto commuting. Of the transit usage by SOMA employees, Muni and BART are the primary modes, carrying approximately two-thirds of all SOMA transit trips. Mode choice for SOMA employees differs substantially from downtown employees.

Employee arrival/departure patterns of surveyed workers indicate that peak period employee travel tends to be spread throughout a two- to three-hour commute period. Based upon the survey, about 55% of the employees (in sub-area 2) depart in the 4:30-5:30 peak hour and 74% depart in the 4:00-6:00 period. These factors indicate that an office project's peak hour travel is about 15% of the total daily travel, while the peak two-hour travel is about 20% of the daily travel.[2] In comparison, downtown office buildings experience about 20% of the daily travel during the p.m. peak hour.[3]

The SOMA surveys indicate that the occupancy in commute vehicles averages 1.25 persons for employees in the project area.

TABLE 8

EMPLOYEE TRAVEL MODES IN THE SOUTH OF MARKET AREA (SOMA)[1]
SUB-AREA 2

Employee Travel Mode	Travel Percentage by Mode
Auto (includes passengers)	58%
Muni	15%
BART[2]	10%
AC Transit[2]	4%
Southern Pacific	3%
SamTrans[2]	3%
Golden Gate Transit	2%
Charter Bus	2%
Other (walk, bicycle, other transit)	3%
	100%

[1]Source: San Francisco Department of City Planning, South of Market Travel Survey, January 1983

[2]Note: A portion of these systems' riders also use Muni as feeder service.

2. Project and Cumulative Trip Generation/Distribution

The City's transportation impact analysis guidelines suggest that 17.5 daily person trips should be assumed as the trip generation rate per 1,000 square feet of net area in an office project.[3] It is estimated that the project's commercial areas would generate 100 daily person/trips per 1,000 square feet of net retail area.[4,5]

The proposed project would have a net office area of 195,000 square feet and a net retail area of 8,500 square feet. As shown in Table 9, page 80, the proposed project would generate about 4,265 daily person trips of which approximately 1,990 would be work trips and 2,275 would be non-work trips. Approximately 595 of the daily trips would occur during the evening peak hour and 770 trips during the 4-6 p.m. period (based upon the South of Market employee survey).

In comparison with the foregoing figures, cumulative travel for downtown office projects under construction, approved or under formal review as of January 27, 1983 (about 17.3 million gross square feet)[6] would be approximately 48,000 peak hour person trips (see Table 10, page 81). Of the 48,000 peak hour trips, approximately 5,000 would be the result of this and other SOMA projects. This estimate of cumulative downtown travel reflects a land use approach. An alternative methodology involves travel projections based upon future employment in San Francisco (and throughout the region). Appendix E, page A-41, discusses the differences between the two approaches.

The 600 Harrison Street project (office area) would contribute about 1.1% of the cumulative peak hour trip generation of the cumulative office projects.

Based upon national research and modal split data obtained through the South of Market travel surveys, the apportionment of project trip generation has been calculated and compared to the cumulative trip generation of other development. The trip totals are outlined in Table 11, page 82, and are the basis for all trip-related impact analyses.

3. Street Network

Assuming an auto occupancy of 1.25, the project would generate a total of about 240 vehicle trips during the p.m. peak hour.[1] Because the project would include limited

TABLE 9

PROJECT PERSON TRIP GENERATION

Project Component	Daily Trip Rate	Daily Trips	P.M. Peak Hour Percent	4 - 6 P.M. Percent	P.M. Peak Hour Trips	4 -6 P.M. Trips
- 195,000 net square feet office	17.5/1,000 sq. ft.	3,415	15%[1]	20%[1]	510	685
- 8,500 net square retail	100/1,000 sq. ft.	850	10%[2]	10%[2]	85	85
	TOTALS	4,265			595	770

- 3,415 daily office trips	x 57%[3] =	1,945 work trips	
	x 43%[3] =		1,470 non-work trips
- 850 daily retail trips	x 5%[2] =	45 work trips	
	x 95%[2] =		1,805 non-work trips
		1,990 work trips	2,275 non-work trips

[1]DCP, South of Market Transportation Survey, February 1983, see footnote 2, page 91, at the end of the transportation impacts section.

[2]Caltrans, Eleventh Progress Report on Trip Ends Generation, July 1976, pages 167-168, 171.

[3]DCP, Guidelines for Environmental Evaluation - Transportation Impacts, October 1980.

TABLE 10

PERSON TRIP GENERATION OF CUMULATIVE DOWNTOWN OFFICE DEVELOPMENT

Transportation Mode	Cumulative Trip Generation		
	Total	South of Market Study Area	Other Downtown Areas
Auto	17,900	2,950	14,950
Muni	12,750	750	12,000
BART	6,800	500	6,300
AC Transit	3,700	200	3,500
Golden Gate	2,000	100	1,900
S.P. Depot	2,000	150	1,850
SamTrans	750	150	600
Ferry	600	---	600
Charter Bus	100	100	---
Other	1,300	150	1,150
	47,900	5,050	42,850

TABLE 11

PROJECT AND CUMULATIVE PERSON TRIP GENERATION DURING P.M. PEAK HOUR

Mode and Distribution	Project		Other Development	Total
	Office	Commercial		
Auto	295	5	17,900	18,200
Muni	80	10	12,750	12,840
BART	50	--	6,800	6,850
AC Transit	20	--	3,700	3,720
SamTrans	15	--	750	765
SP	15	--	2,000	2,015
GGT	10	--	2,000	2,010
Ferry	-	--	600	600
Charter Bus	10	---	100	110
Other	15	70[1]	1,300	1,385
TOTALS	510	85	47,900	48,495

[1] Includes pedestrian trips to/from commercial areas which would be internal to the proposed project.

Source: Modal split factors for project office area obtained from South of Market travel survey conducted by the Department of City Planning. Modal split for retail derived from Transportation Engineering Journal of ASCE, January 1982, page 15.

parking, (see detailed discussion in parking impact analysis, page 88) project traffic would be distributed to nearby parking facilities and would thus tend to be dispersed on the areas streets. Based upon the SOMA travel surveys, the project's traffic has been distributed onto the street network - it has also been assumed that the project's peak trip generation, is approximately the same during both the a.m. and p.m. peak hours. The project would add 1-3% to existing intersection volumes and traffic flows would not experience a degradation other than a one-half service level decline at Second and Harrison. The local street network would also be impacted by cumulative development in the SOMA and downtown areas. Because downtown employees tend to park in the SOMA, cumulative downtown development would also add vehicle trips to the street network in the vicinity of the project site. Within the SOMA study area, there are currently about 26,000 employees. Proposed cumulative development within or immediately adjacent to this area (not including the proposed project) would add about 9,600 employees, approximately 37% over the current estimate. If auto usage and occupancy are consistent with current patterns, the increased employment could result in a similar increase in local street traffic. With a 35-40% increase due to cumulative downtown and SOMA development, intersection service levels could be affected as shown in Table 12, page 84. With cumulative SOMA development however, two of the five intersections studied could degrade to unstable conditions (service level E) during the 4:30-5:30 p.m. peak hour (see Appendix B, Table B-2, page A-26 for levels of service definitions).

The regional freeway network (I-80 and Highway 101 serving the East Bay and Peninsula) is currently operating at jammed (service level E-F) conditions during the p.m. peak hour (current peak hour volumes are shown in Table 13, page 84).[7] With the project and cumulative travel outlined in Table 11, the regional highways would experience peak hour traffic increases of about 0.2% and 15% respectively. The project traffic would not be measurable within the day to day fluctuations in regional traffic flow. The cumulative development, however, could result in further degradation in regional traffic flows characteristics. The increase due to cumulative development could result in unstable forced flow traffic conditions (service level E-F) being extended throughout the 3-7 p.m. period. This congestion would also affect freeway on-ramps, causing further back-ups on local access streets.

It is recognized that as traffic congestion increases, commuters may seek alternative transit modes or increase auto occupancy. A shift in mode (or a more intense use of the auto mode) would reduce the overall traffic impacts. The extent of this reduction would depend upon alternate modes being able to accommodate travel shifts.

TABLE 12

EXISTING AND PROJECTED INTERSECTION SERVICE LEVELS[1]

Intersection and Peak Hour		Service Level Existing	With project	With Project and Cumulative
Second/Folsom	4:30-5:30 p.m.	A	A	B-C
Folsom/Hawthorne	7:30-8:30 a.m.	A	A	A
Second/Harrison	4:30-5:30 p.m.	B-C	C	E
Third/Folsom	4:30-5:30 p.m.	A	A	B-C
Third/Harrison	4:30-5:30 p.m.	B-C	B-C	E

[1] A complete discussion of service level definitions is found in Appendix B, Table B-2, page A-26.

TABLE 13

1981 PEAK HOUR VOLUMES ON REGIONAL HIGHWAYS

Intersection	Peak Hour Volume
Highway 101 (south of I-80)	15,100
Highway 101 (north of Golden Gate Bridge)	11,000
Highway 80 (north of Highway 101)	17,100
Highway 280 (Mariposa to Brannan)	4,600

Source: Caltrans, 1981 Traffic Volumes, 1982.

4. Transit Service

a. Muni

Existing ridership statistics on the lines serving the project site have been provided by the City. Outlined in Appendix B, Table B-3, page A-27, these data reflect the p.m. peak hour ridership on Muni lines outbound from the South of Market and downtown area. The projections include increased ridership due to cumulative development which is under construction, has been approved or is under formal review as of Janaury 27, 1983. A load factor of 1.0 indicates ridership that is 150% of the available seating for buses and 220% of the available seating for light rail vehicles. Of the 35 lines serving the project area, 27 lines are projected to have load factors equal to or greater than 1.00 and these lines will experience congested conditions (a load factor of 1.00 reflects full capacity and is considered to be the maximum acceptable load factor). The project would add about 90 passengers to these lines (Table 11, page 82), representing an increase of about 0.3% in the total projected peak outbound ridership for all lines serving the site. The load factors would not be measurably affected by the project alone. Because the 80X and 81X would not provide convenient service between the site and the S.P. station, it is not expected that the project would increase patronage on these lines.

Consideration has also been given to the use of Muni lines as feeders to the regional transit service. The 15, 30, 32 and 42 lines link with the downtown area and could therefore provide feeder service to the BART and AC Transit systems. These lines are currently operating at a combined load factor of 0.45 (in the peak northbound direction approaching Market Street).[8] As shown in Table 14, page 86, the load factor with cumulative South of Market development plus the project would allow the feeder service to remain within its capacity.

Muni plans (in anticipation of patronage growth) project a 19% increase in the system capacity by 1987. This increase would reflect added capacity in the Muni Metro light rail service, and the replacement of existing buses with articulated coaches. This capacity increase would tend to reduce the projected load factors, but cannot be specifically quantified; benefits, however, would depend upon a more detailed improvement program with capacity increases cited for each route. With a 19% capacity increase systemwide, 17 of the 35 lines listed in Appendix B, Table B-3, page A-27, would have load factors equal to or exceeding 1.00.

TABLE 14

PEAK HOUR RIDERSHIP ON MUNI FEEDER LINES APPROACHING MARKET STREET

	Passengers			Load Factor			
Line	Exist	Cum. Without Project	Cum. With Project	Exist	Existing Capacity	Cum. Without Project[1]	Cum. With Project[1]
15, 30 32, 42	1,325	1,990	2,035	0.45	2,945	0.68	0.69

[1] Assumes existing capacity

b. BART

BART staff have provided p.m. peak hour operating statistics for outbound trains at their peak load points (during October-December 1982).[9] As shown in Table 15, the additional patronage due to the project would not have a measurable effect on load factors.

TABLE 15

BART PEAK HOUR OPERATING STATISTICS

	East Bay Trains			Daly City Trains		
	Existing	With Project	Cumulative With Project	Existing	With Project	Cumulative With Project
Seats	9,924	9,924	16,900[1]	6,912	6,912	11,800[1]
Passengers	13,556	13,591	18,300	5,821	5,836	7,900
Average Load Factor	1.37	1.37	1.08	0.84	0.84	0.67

[1] Assumes capacity improvements planned by BART.

Cumulative South of Market and downtown development would increase BART ridership by about 6,800 passengers. BART's short-term (five-year) improvement plans call for approximately 20% increased capacity (with added cars and some decreased headways).[10]

Although funding and scheduling are more uncertain, the Daly City tail track would improve system capacity by an additional 50%.[10] These improvements would allow average p.m. peak-hour load factors of about 1.0-1.1 on East Bay trains. BART district policy calls for a maximum load factor averaging 1.3 for all trains during the peak-hour. The project would add less than 0.1% to BART's p.m. peak-hour patronage. (BART defines a load factor of 1.00 as a patronage at 100% of available seats).

c. Golden Gate Transit

Golden Gate Transit District operates 147 buses out of the downtown area during the afternoon peak hour; about 120 buses on financial district routes, and 27 buses on Civic Center routes. On the average, these buses run at 90-95% of their design capacity level as set by Golden Gate policy (i.e., at seating capacity).[11] Golden Gate Transit allows a maximum (crush) capacity of 59 passengers per bus, corresponding to 10 standees, which equates to 8,675 peak hour riders. Current peak hour ridership out of downtown is estimated at 6,620 passengers. On certain peak runs, there may be more than 20 standees.

With a maximum (crush) capacity of 8,675 peak-hour passengers, the effect of cumulative downtown development would be to raise patronage to about 8,600 passengers (19% over design capacity and 99% of "crush" capacity). The proposed project would add ten trips (or approximately 0.1%) to the projected ridership (see Table 11, page 82) and thus the increase would not be measurable. Because of financial limitations, however, the District would probably not be able to increase its capacity to accommodate the increased demand due to cumulative development.

d. AC Transit

AC Transit operates about 200 buses outbound from the Transbay Terminal during the p.m. peak hour. Based on a capacity of 125% of available seating (AC policy accepts 25% standees) and an average of 50 seats per bus, space for 12,500 passengers is available. With a current peak hour patronage of 9,000 during this peak hour, the overall capacity reserve is 3,500.[12] Within the peak hour, some of the peak runs have higher load factors and therefore no excess capacity.

The proposed project and cumulative development would generate about 3,700 trips, exceeding the 3,500 person capacity reserve. AC Transit staff indicates that capacity will be increased about 10% over the next three to four years, which will raise the capacity reserve. With the increased capacity, patronage from cumulative development could be accommodated.

e. SamTrans

There are currently 24 SamTrans buses leaving downtown during the afternoon peak hour. They operate at about 100% of seating capacity, corresponding to peak hour riderhsip of about 1,200 passengers.[13] Assuming a maximum capacity of 125% of available seats, it is estimated that there is a reserve capacity for 300 passengers. The project's 15 passengers could be accommodated within this reserve. The patronage from cumulative development (including the proposed project) would exceed the available 300-passenger reserve capacity of SamTrans by 465 persons. No specific capacity improvements have been cited by the District.

f. Southern Pacific

Current services provide 11 southbound trains with 9,000 seats during the p.m. peak hour. The current load factor (based on one seat per passsenger is 0.83, or approximately 7,470 seats.[14]

Southern Pacific service will be improved by the addition (within three to five years) of approximately 1,200 seats to the southbound peak hour capacity. With the system's existing reserve capacity of about 1,530 seats, the total capacity reserve would be about 2,730 seats. Thus, the addition of 2,000 new peak hour passengers due to cumulative SOMA and downtown development (including the proposed project) could be accommodated.

5. Parking Impacts

The project's parking demand has been calculated on the basis of trip generation and modal split data. Based upon the project's travel patterns, parking would be as follows:

- 1,990 daily work trips x 58% auto/1.25 persons per auto /2 one-way trips per auto = 460 long-term spaces.

- 2,275 daily non-work trips x 10% auto/1.25 persons per auto /2 one-way trips per auto /5.7 turnovers daily = 15 short-term spaces.

- Total parking demand = 475 $\pm$ spaces

The project would displace an existing 220 space surface parking lot which was occupied by 200 cars at the time of a recent site review. Many spaces are less than the length and

width permitted by the planning code so the number of parking spaces with acceptible dimensions on the lot would be less than 220.

The proposed project would include 116 spaces, including four handicapped parking spaces with direct access to the elevator. (Indoor bicycle parking also would be provided on the parking level.) This would be 291 spaces short of the required number of parking spaces as calculated below under Section 151 of the City Planning Code. The project sponsor would seek a variance to the 407-space parking requirement. (In comparison, the project parking would be 359 spaces short of the parking need as calculated from the project trip generation and modal split data.)

- 195,000 s.f. net office area @ 1/500 s.f.	=	390 spaces
- 8,500 s.f. net retail area @ 1/500 s.f.	=	17
TOTAL	=	407 spaces

Peak hour traffic generation from the project's parking garage has been calculated on the basis of employee travel surveys. If all of the spaces are for employees, about 65 outbound trips would occur during the p.m. peak hour. (If a portion of the spaces are short-term, peak hour activity would be reduced). This traffic would introduce new vehicle conflicts on Harrison Street. The conflicts would however, be of a short duration and would not have a measurable effect on service levels at nearby intersections.

With the project's added parking demand and displacement of existing spaces, the parking occupancy (in the area surveyed) would be saturated (100+%). Further parking demand (for about 4,500 spaces) would be generated by the cumulative South of Market development. This cumulative demand could not be accommodated in the project area.

Off-street freight loading needs (as per Planning Commission policy) have been calculated as follows:[15]

- 228,000 s.f. gross office area @ 0.1/10,000	=	2.28 spaces
- 10,000 s.f. gross retail	=	0
TOTAL	=	2.28 spaces

Although the retail area would fall below the minimum freight loading requirements, some delivery activity would occur and the overall project would need 2-3 spaces. The project

would include two freight loading spaces and a dumpster storage room with access on Harrison Street. During peak periods of freight activity, one delivery and/or pick-up vehicle may be required to park along Harrison. Therefore, a yellow curb may be requested from the San Francisco Police Department. The provision of two spaces would meet the requirement under Section 152 of the City Planning Code. Provision of two spaces would also meet the recommended loading requirements contained in City Planning Commission Resolution 9286, adopted January 21, 1982. The two freight loading spaces would also meet the dimension requirements of Resolution 9286 (12' X 35' X 14' clearance--this dimension exceeds the City Planning Code requirement).

6. Pedestrian Flows

The South of Market area travel surveys indicate about 15% (510) of the project's daily trips would occur during the 4:30-5:30 p.m. peak hour (about 145 of the 510 total p.m. peak hour trips would be to/from the project garage). Based upon travel research conducted by the California Department of Transportation,[4] it is estimated that approximately 10% (425) of the daily trips would occur during the peak-hour of the 11:30 a.m. - 1:30 p.m. mid-day period. Thus, 425 midday peak hour pedestrian trips and 365 p.m. peak hour trips would be added to the existing pedestrian flows. Based upon these projections, the quality of pedestrian flow would degrade slightly from "open" to "unimpeded" conditions along the sidewalks adjacent to the site and in the crosswalk across Harrison Street (see Appendix B, Table B-1, page A-25 for definitions of pedestrian flow regimes).

Cumulative SOMA development would add to pedestrian activity in the area. Although it would be difficult to project specific pedestrian activity, cumulative SOMA development could result in pedestrian flows degrading to the "impeded" range.

7. Construction Activity

Based upon the project's construction cost and 12-month construction schedule, it is estimated that approximately 310 construction workers would be employed on-site (see Section IV.D., page 64). If all of the construction employees drive with limited ridesharing and similar work shifts, about 300 auto trips would be generated during the employees' evening commute period. Because construction employees tend to work earlier shifts, it is likely that only a portion of this travel would occur during the 4:30-5:30 p.m. peak hour.[16] The construction employee trips would not degrade traffic service levels on the adjacent street network. Employees would seek parking in the project area,

competing with other employees and visitors for the very limited parking currently available. Construction activity could encroach onto sidewalk areas, disrupting pedestrian flows.

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[1]San Francisco Department of City Planning, South of Market Transportation Survey, February 1983.

[2]Calculated as follows (for a 1,000 gross square feet area of office): 1,000 gross square feet x 4 employees/1,000 square feet x 55% departing during p.m. peak-hour = 2.2 peak-hour person trips; 800 net square feet x 17.5 daily trips per 1,000 square feet x 14 daily person trips. 2.2 peak hour person trips/14 daily person trips = 15%± p.m. peak hour.

[3]San Francisco Department of City Planning, Guidelines for Environmental Evaluation - Transportation Impacts, June 1980, revised October 1980.

[4]Caltrans, Thirteenth Progress Report on Trip Ends Generation, June 1981, page 87.

[5]Institute of Transportation Engineers, Trip Generation, Virginia, 1979.

[6]List of cumulative projects under construction, approved or under formal review as of January 27, 1983 appears as Table F-1, page A-52.

[7]Scott MacCalden, Senior Engineer, Highway Operations Branch, Caltrans, telephone conversation, December 28, 1981.

[8]Charles Romeyn, Muni Schedules Department, telephone conversation, February 8, 1983.

[9]BART Planning Department, Representative P.M. Peak Weekday Load Factors for October - December 1982.

[10]Ward Belding, BART Planner, telephone conversation, December 7, 1982.

[11]Alan Zahradnik, Golden Gate Transit Planner, telephone conversation, April 13, 1982.

[12]Gene Gardner, AC Transit Planner, telephone conversation, August 9, 1982.

[13]Gregory Kipp, SamTrans Planner, telephone conversation, August 9, 1982.

[14]Ben Chuck, Senior Transportation Planner, Caltrans, telephone conversation, August 9, 1982.

[15]Guidelines adopted by San Francisco Planning Commission on January 21, 1982, described in Resolution No. 9286; guidelines based on findings in the San Francisco Center City Pedestrian Circulation and Goods Movement Study, September 1980, Wilbur Smith and Associates.

[16]Gail Bloom, Office of Environmental Review, telephone conversation, September 2, 1982.

F. AIR QUALITY AND CLIMATE

1. Air Quality

Construction activities would generate pollutants in the project vicinity. Trucks and equipment would release exhaust that would affect neighboring buildings during construction hours. Site preparation and construction activities would generate suspended particulate matter (TSP). Although emission factors upon which to base estimates of the resulting atmospheric concentrations of particulates are not available, violations of the state 24-hour TSP standard may result in the immediate vicinity of the project.

Direct atmospheric emissions from the operation of the proposed project would result from the combustion of natural gas on-site for water and space heating. Natural gas is a relatively clean-burning fuel therefore, no visible plume would occur. Exhaust gases would be emitted at rooftop level and would be diluted to concentrations well below the ambient air qualty standards before reaching ground level.

The project would act as a source of atmospheric emissions because of the vehicular traffic it would generate. On the local scale, carbon monoxide (CO) is the predominant pollutant emitted by motor vehicles. Projected CO concentrations for 1988 for the four intersections most heavily impacted by the project were calculated both with and without the proposed project. The calculations assume that other cumulative planned and proposed projects in the downtown area would have been built. These results are shown in Table 16, page 93. The results represent the exposure a person would have at the worst curbside location during worst-case meteorological conditions. The highest concentration would occur during the p.m. peak hour, most likely on a winter evening.

These results indicated that no violations of State or federal CO air quality standards would occur as a result of the project or projected cumulative downtown development. Since CO concentrations drop off rapidly with distance from curbside, occupants of nearby buildings would be exposed to lower concentrations of CO than reported in Table 16, page 93.

Cumulative development would result in CO concentrations in 1988 which would be similar to 1982 levels without cumulative development. This is because ongoing State and federal emissions controls are expected to result in lower vehicular emissions rates in 1988 than in 1982, but the predicted additional traffic volumes in 1988 offset a portion of the expected gains from the "cleaner" cars.

TABLE 16

EXISTING AND PROJECTED CURBSIDE CARBON MONOXIDE CONCENTRATIONS

(parts per million)

	1982 Existing		1988 Cumulative without Project		1988 Cumulative plus Project[1]	
	1 hr	8 hr	1 hr	8 hr	1 hr	8 hr
Second/Harrison	14	8	13	8	13	8
Second/Folsom	15	8	15	8	15	8
Third/Harrison	18	9	17	9	17	9
Second/Brannan	16	8	16	8	16	8
Background[2]	7.0	5.3	7.4	5.7	7.4	5.7

State 1-hour CO standard = 20 ppm
Federal 8-hour CO standard = 9 ppm

[1] Calculations were made using the procedures recommended in California Air Resources Board, Research Division, Air Quality Modeling Section, Estimating Carbon Monoxide Concentrations for Hot Spots Analysis, Sacramento, CA May 1980.

[2] Background concentrations are based upon one half the highest measured values in San Francisco in 1980-1981 and adjusted to account for regional pollution controls in accordance with the estimates contained in the 1982 Bay Area Air Quality Plan. The 1988 background values include an extra 35% to account for cumulative growth in traffic in the downtown area.

The regional impact of the project would be due to the increase in vehicle miles traveled (VMT) associated with the project. Based on the predicted number of project-generated trips and their associated lengths, the daily regional increase of VMT due to the project is estimated at 11,000. Using composite emission factors supplied by the California Air Resources Board and assuming an average trip speed of 20 mph, total regional emissions from the project traffic have been estimated in Table 17, page 95. Since the incremental increase in hydrocarbon and oxides of nitrogen emission are both about 0.04% of 1988 predicted regional totals, it is not expected that the resulting increase in downwind ozone levels would be of sufficient magnitude to be measured or modeled accurately. However, in combination with emissions from other projects it could contribute to measurable increases in ozone concentrations at downwind locations and possible violations of the ozone air quality standard at locations which are already close to exceeding this standard.

The proposed project would be consistent with the growth projections and the specific transportation control measures contained in the Bay Area Air Quality Plan. Therefore, the project would be consistent with that plan.

The California Health and Safety Code requires that measures be taken to minimize dust generation, specifically, watering of demolition materials and soils. An effective watering program (complete coverage twice-daily) can reduce emissions by about 50%. The project sponsor would require the contractor to implement a twice-daily watering program, which would reduce the likelihood of airborne construction dust and particulates exceeding state and federal standards.

2. Climate[1]

Winds in San Francisco are generally greatest in the summer months. During the summer, winds are from the northwest, west and southwest about 97% of the time, with a mean speed of eight miles per hour.

The effect of a building on the wind at ground level is primarily determined by the extent the building is exposed to prevailing winds and by its design. In San Francisco, buildings that cause adverse ground-level winds generally are free standing, have a wide face oriented into the prevailing winds and have a continuous, unbroken facade down to the ground level.

TABLE 17

PROJECTED REGIONAL EMISSIONS
(tons/day)

Pollutant	1988 Project[1] Emissions	1984 Regional[2] Total Emissions	Fractional Increase due to Project
Carbon Monoxide	.28	2,200	.0001
Hydrocarbons	.02	570	.00004
Nitrogen Oxides	.02	570	.00004
Particulates	.03	550	.00005
Sulfur Oxides	.002	210	.00001

[1]Based upon a daily average for the project of 11,000 vehicle miles traveled.

[2]Bay Area Air Quality Management District, 1979 Source Inventory, San Francisco, 1980, and Association of Bay Area Governments, 1982 Bay Area Air Quality Plan, Draft for Public Review, Berkeley, California, July 1982.

The proposed structure would be sheltered from northwest and southwest winds, but would extend six stories into west winds. The orientation of the six-story project would accelerate winds at ground level at Dow Place. The pedestrian areas adjacent to the site along Second Street would be sheltered by the project.

The wind accelerations along Dow Place under west wind conditions would not be extreme (on the order at 5-10%) due to the low-rise nature of the project. The bulk of the project does not appear to be sufficient to result in hazardous wind accelerations.

Future construction west of the site would reduce its exposure to west winds and eliminate predicted wind impacts.

3. Sunlight and Shadows

Shadows cast by existing and proposed buildings in the project area were calculated for two times of day (1 p.m. and 4 p.m.) for the first day of each season (see Figures 24, 25 and 26, pages 97 through 99). Shadows are shown for ground level areas only. Shadows cast on building rooftops are not shown. In mornings, for all seasons, the project would cast shadows to the north and east toward the adjacent PT&T equipment and parking area. Shadow diagrams were not prepared for the morning hours since they would not have any impact on the sidewalks of Second and Harrison Streets or the plaza of the Second and Folsom (Marathon) Project.

By 1 p.m. for all seasons, the project would cast shadows in the direction of the southern building of the Second and Folsom Project. In winter, at 1 p.m., project shadows would extend as far as the plaza for the Second and Folsom Project. A 50-foot triangular section of the plaza's southern corner and the face of building's first floor would be shaded (see Figure 24a, page 97). In summer, spring and fall at 1 p.m., a 150-foot length of sidewalk, on the Second Street side closest to the proposed project, would be the only pedestrian area shaded by the project (see Figures 25a and 26a, pages 98 and 99).

At 4 p.m. in the afternoon, shadows would generally be cast toward the intersection of Second and Harrison Streets. In summer, only the sidewalks adjacent to the project would be shaded (see Figure 25b, page 98). In spring and fall shadows at 4 p.m. would extend across the intersection of Second and Harrision Streets to and across the southern corner to the Second and Folsom Project, shading 1½ to 2 stories of that building's face. Shadows from the tallest portions of the proposed buiding's southern facade would extend across the southern Harrison Street sidewalk. Shadows from the stepped back portions would not shade that sidewalk (see Figure 26b, page 99). At 4 p.m. in winter, both sides of Second Street, the northern sidewalk of Harrison Street and approximately five stories of the Second and Folsom project's southern building would be in shade.

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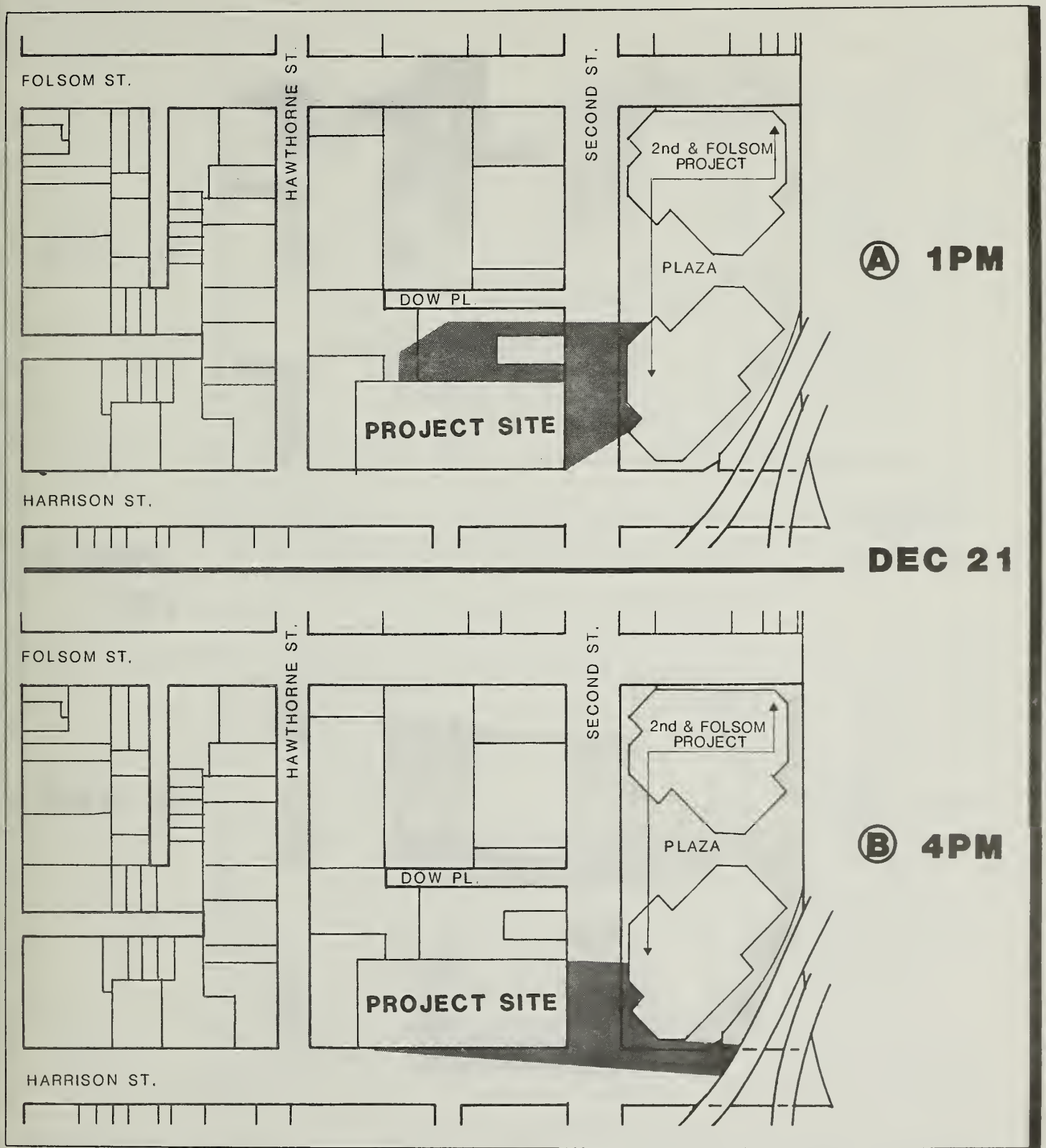
[1] Donald Ballanti, Certified Consulting Meteorologist, Wind Impact Evaluation for the Proposed Second and Harrison Building, San Francisco, October 5, 1982, 3 pages, reproduced as Appendix C, page A-33 of this EIR.



SOURCE: EIP

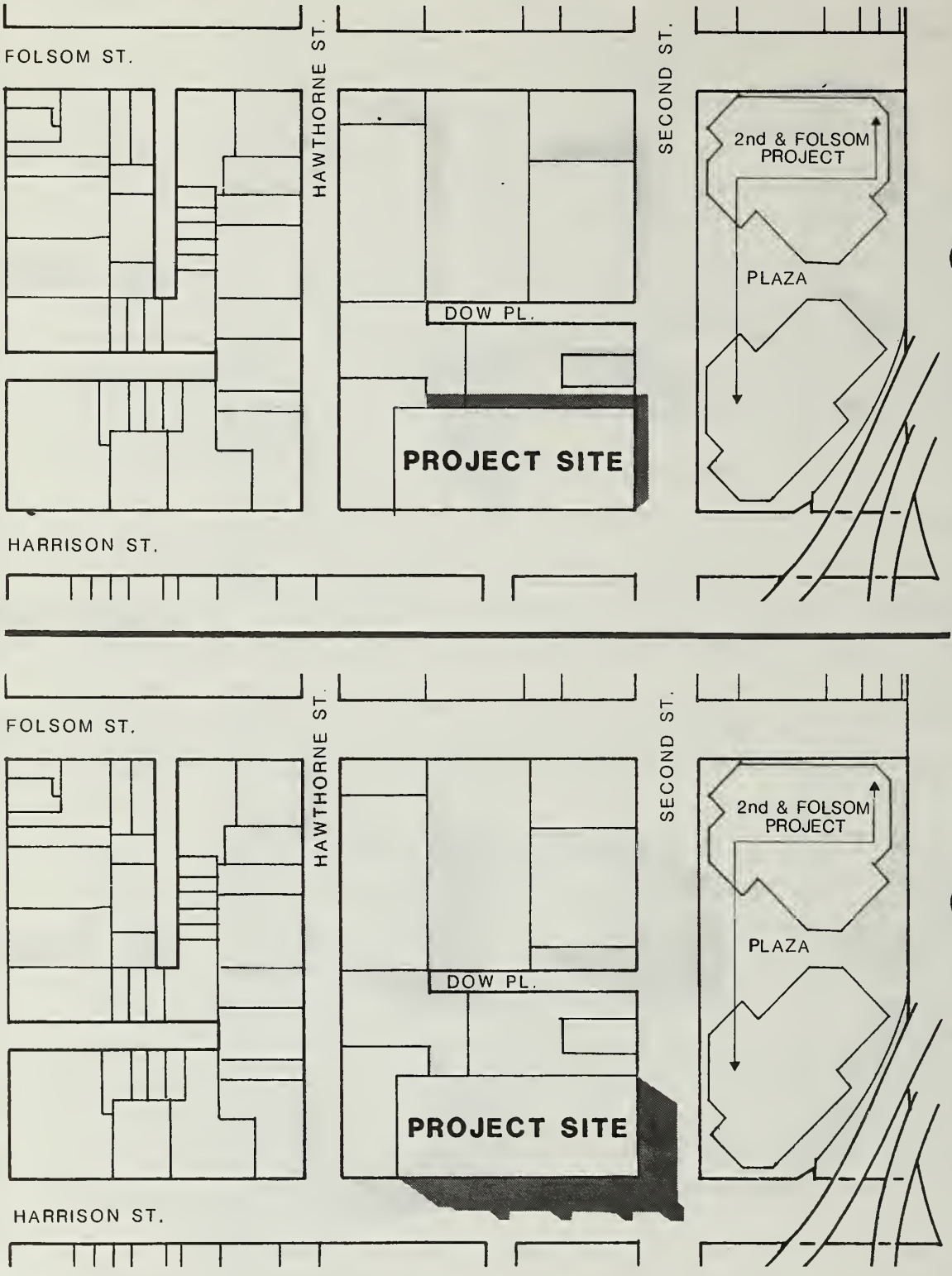
EXISTING SHADOWS

SHADOWS ADDED BY PROPOSED PROJECT

SCALE 0 100 200 400 FEET

600 Harrison Street

SHADOW PATTERN ANALYSIS **FIGURE 24**



SOURCE: EIP

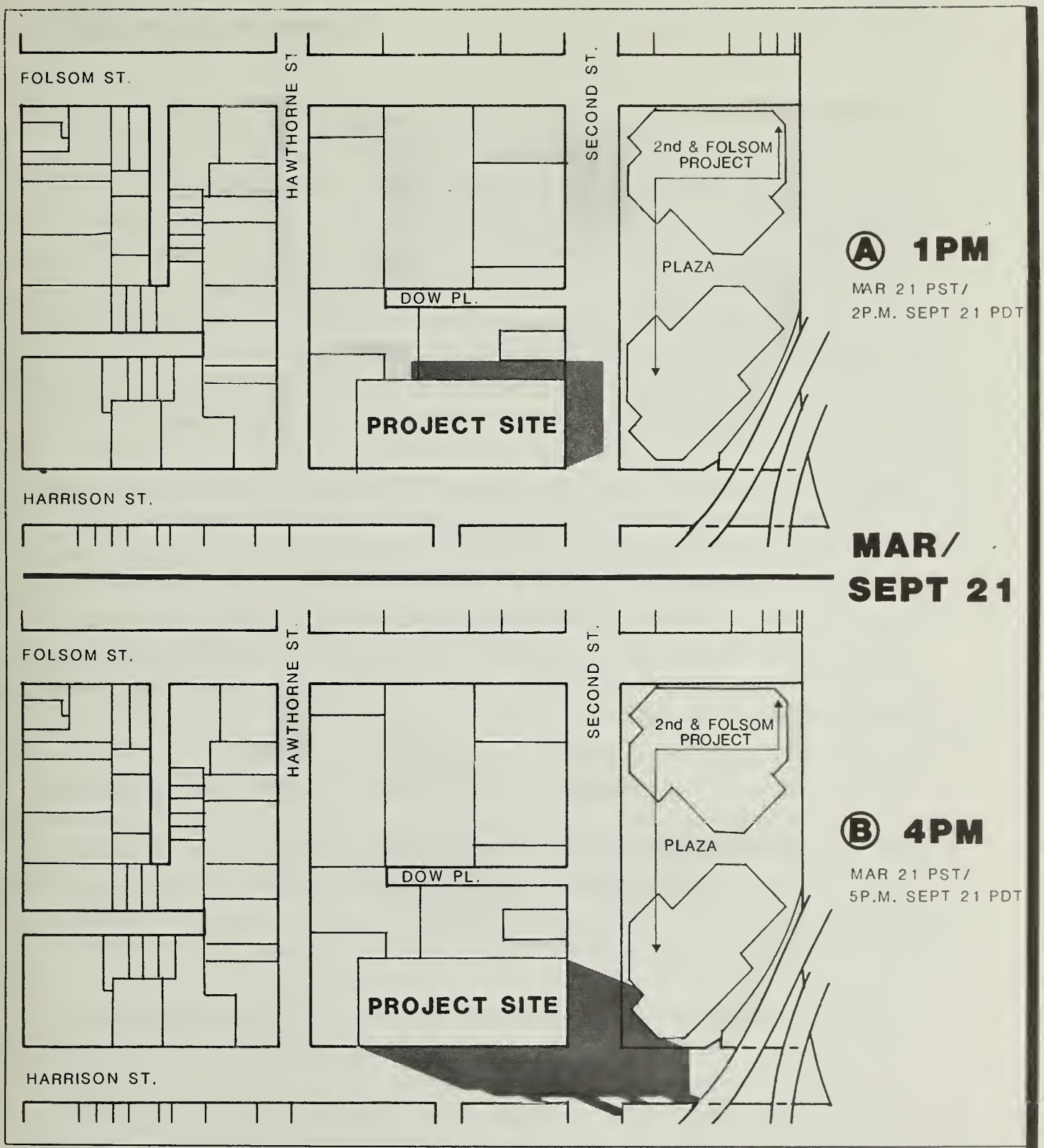
EXISTING SHADOWS

SHADOWS ADDED BY PROPOSED PROJECT

SCALE 0 100 200 400 FEET

600 Harrison Street

SHADOW PATTERN ANALYSIS **FIGURE 25**



SOURCE: EIP

EXISTING SHADOWS

SHADOWS ADDED BY PROPOSED PROJECT

SCALE 0 100 200 400 FEET

600 Harrison Street

SHADOW PATTERN ANALYSIS **FIGURE 26**

G. NOISE

The site is currently exposed to noise generated by traffic on Second and Harrison Streets and the Embarcadero Freeway. A noise measurement survey was conducted to determine typical daytime noise levels and to serve as a basis for assessing project noise impacts.[1] A complete discussion of existing ambient noise levels is found in Section III. F. Environmental Setting: Noise, page 45. To summarize, typical existing maximum noise levels are as follows: 78 to 86 dBA[2] on the south side of Harrison Street, opposite the Superior Coffee and Tea Company building; 67 to 75 dBA outside of the Pacific Telephone building adjacent to the north boundary of the project site; and 60 to 70 dBA outside of the AT&T building located at the intersection of Hawthorne and Folsom Streets.

Construction of the 600 Harrison Street building would take place over approximately one year, and would encompass three phases: foundation excavation, foundation construction, and building erection. Due to the preliminary nature of the report plans, it is not known at this time what construction techniques or equipment would be used during the various phases. In order to estimate possible construction noise impacts, this analysis assumes typical equipment and construction techniques. A foundation investigation completed for the project indicates that pile foundations would not be required and therefore pile drivers would not be used on the job.[3]

Foundation excavation would require the use of pavement breakers to remove the existing parking lot and the use of bulldozers, graders, and haul trucks to remove the excavated material. Pavement breakers emit noise levels of about 90 dBA measured at a distance of 50 feet. It is anticipated that pavement breakers would be used for less than a week to remove the existing asphalt pavement. Front-end loaders and trucks used to haul away debris would emit levels of about 75-85 dBA at a distance of 50 feet.

Maximum noise levels during the foundation excavation phase would reach approximately 86 dBA outside of the buildings on the south side of Harrison Street and the adjacent Superior Coffee and Tea Company building during pavement breaking. During grading and excavation, noise levels at these locations would be about 5-10 dBA lower than those generated during pavement breaking. Noise levels during this entire phase would be about the same level as existing traffic noise and would not be expected to impact the Superior Coffee and Tea Company building or the buildings across Harrison Street. Noise levels

outside of the one-story Pacific Telephone building immediately north of the project site would reach a maximum of about 92 dBA during pavement breaking. It appears that the windows facing the construction site would not need to be opened for ventilation as the windows on the opposite side of the building could be opened. Assuming windows on both sides of the building were open, maximum noise levels inside of this building would be expected to reach about 77 dBA. At this level it would be difficult to concentrate and relaxed conversation would not be possible and the noise level would interfere with phone conversations. During grading and excavation, noise levels would be expected to range from about 61 to 72 dBA inside this building. This noise level would be annoying and distracting, would interfere with relaxed conversation, and could interfere with the use of the telephone. Concentration would be impaired, but would not be impossible. Noise levels outside of the AT&T building located north of the project site at the intersection of Hawthorne and Folsom Streets would reach a maximum level of about 79 dBA during pavement breaking. As these windows are fixed, the structure will reduce noise levels by about 30 dBA resulting in interior levels of about 49 dBA during pavement breaking. This noise would be audible, but would not be expected to annoy or distract office workers. During grading noise levels would be even lower.

The noisiest pieces of equipment used during the foundation construction phase would be concrete pumping trucks (concrete pumpers). Concrete pumpers emit noise levels of approximately 85 dBA at a distance of 50 feet.

With concrete pumpers, noise levels inside the Superior Coffee and Tea Company building and buildings on the south side of Harrison Street would reach about 65 dBA if the windows of these buildings were open and about 60 dBA if the windows were closed. During the use of concrete pumpers, noise levels inside of the one-story Pacific Telephone office building adjacent to the project site would be expected to reach about 67 dBA. Noise levels inside the AT&T building north of the project site at Hawthorne and Folsom Streets would reach about 44 dBA.

At these levels, no interference to any adjacent land use would be anticipated with the possible exception of the one-story Pacific Telephone building. If concrete pumping trucks were situated directly outside of this office, interference with office use could be expected. However, if these pumping trucks are located on the Harrison Street side of the site, no interference would be anticipated to the Pacific Telephone building.

During building erection, the noisiest single activity would be the use of the impact wrenches used to fasten shear connectors and metal decking to the steel frame. Other construction activity would range in noise emission from 60-80 dBA measured at a distance of 50 feet. Impact wrenches emit about 95 dBA at a distance of 50 feet. During the times that these wrenches are used -- typically sporadically over a period of two months -- noise levels would be expected to reach about 82 dBA inside the Superior Coffee and Tea Company building and the buildings opposite on the south side of Harrison Street. During the use of the impact wrenches, it would be difficult to concentrate, relaxed conversation would be impossible, phone conversation would be difficult, and workers would be expected to be annoyed and distracted. Noise levels inside the one-story Pacific Telephone building would also be expected to reach about 82 dBA and the same impact would be expected on this building. Noise levels inside the AT&T building north of the site would not be expected to exceed approximately 55 dBA and although audible, would not be expected to interfere with the work process.

In summary, the noisiest activity associated with the construction of the 600 Harrison Street building would be the use of impact wrenches during a two-month period at the early part of construction. The major impacts would be on the one-story Pacific Telephone building, the Superior Coffee and Tea Company building and buildings directly across the project site on Harrison Street.

Construction noise in the City and County of San Francisco is controlled by Ordinance 274-72, Regulation of Noise, Section 2907. The ordinance requires that all powered construction equipment except impact tools and equipment emit not more than 80 dBA measured at 100 feet (86 dBA at 50 feet). Impact tools and equipment including pavement breakers and jackhammersmust have both intake and exhaust muffled to the satisfaction of the Director of Public Works. It should be noted that the City has not required mufflers on impact tools used in San Francisco. The ordinance further requires a special permit for construction after 8:00 p.m. and before 7:00 a.m.

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[1]Noise measurement survey and noise impact analysis conducted by Charles M. Salter Associates, Inc. in September 1982. See Section III.F., Table 3, page 47 for results of the noise measurement survey.

[2]A complete discussion of acoustical concepts is found in Appendix D, page A-37.

[3]Gary Carpenter, Don Hillebrandt Associates, Geotechnical Consultants, telephone conversation, February 3, 1982.

H. COMMUNITY SERVICES

The Initial Study prepared for the proposed project (see Appendix A, page A-1) determined all potential environmental issues associated with utilities and public services to be insignificant with the exception of cumulative effects on fire protection services. Therefore, this section is limited to a discussion of cumulative impacts related to fire protection services.

Fire[1]

The proposed project would be served by the following San Francisco Fire Department stations:

- Station 8, located at 36 Bluxome Street
- Station 31, located at Pier 22½
- Station 1, located at 416 Jessie Street

Minimum response time to the project site would be less than three minutes.

The proposed 600 Harrison Street project would increase population and property on the site, which could increase the demand for fire protection services. The project would incorporate more extensive fire protection measures than most existing buildings in the area to comply with the more stringent code standards now in effect. Implementation of this project would not require additional staff or equipment and water pressure in the project area would be adequate for fire suppresson. Projected cumulative growth within the area, however, could require an additional fire station and staff. Additional water supply or water main upgrading would be required should additional development occur east of the project site due to increased population and need for greater fire protection safety equipment (i.e. sprinkler system installations).

In general, existing public facilities, equipment and labor are adequate to serve the project. While costs for servicing the site would increase due to an increase in density of uses on the site, costs per unit, would not increase, and may actually decline.

Net costs of providing services for cumulative downtown development are difficult to quantify. Appendix Table G-3, page A-62, discussions some of the various approaches that have been attempted to address the issue of net fiscal costs of downtown development.

According to some of the studies, downtown development could results in an initial fiscal benefit. Since revenues to the City would probably increase at a slower rate than costs, due to Proposition 13 limitations on property tax increases, there could be a time when cumulative costs of providing services to currently proposed and approved development would be higher than revenues provided. This would be the case only if no new revenue sources are found, the rate of new development declines, and proposed development is not resold at some future date.

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[1]Edward J. Phipps, Assistant Chief, Support Services, San Francisco Fire Department, letter, June 28, 1982 and telephone conversation, December 3, 1982..

I. ENERGY

The proposed project is subject to Title 24 of the California Administrative Code which establishes energy conservation standards for the design and construction of buildings. The specific regulations which would apply[1] were adopted by the California Energy Resources Conservation and Development Commission, June 30, 1977 and went into effect January 1, 1978. A new version of these standards is currently in preparation and is expected to be available in 1983 and in force in 1984.[2]

The applicable regulations set standards governing the design and construction of the building envelope; heating, ventilating and air conditioning systems; service water heating; electrical distribution and lighting. The requirements of the standards must be satisfied in one of three ways:

- The energy budget method, which requires that the energy consumption of the proposed building be calculated using a state-approved energy analysis computer program and then compared to an allowable limit.

- The component performance standards method, which requires the incorporation of a set of specific design features.

- The use of nondepletable energy resources. (Energy from nondepletable sources, such as solar or wind energy, is not counted against the allowable energy budget.)

The documentation of compliance with these standards is submitted with the application for the building permit.

At this stage in the design of the proposed project insufficient information is available upon which to base a building energy budget analysis for either Title 24 compliance or other engineering purposes. In lieu of that, estimates of the likely energy consumption of the proposed project have been made based upon comparisons with other projects in San Francisco and assuming compliance with Title 24 by the energy budget method. The resulting estimates are shown in Table 18, page 106.

TABLE 18

ESTIMATED ANNUAL PROJECT ENERGY USE [1,2]

Connected kilowatt load	2,000 kilowatts
Total annual BTU[3] per square foot of office space	126,000 BTU per square foot per year
Total annual BTU per square foot of retail space	200,000 BTU per square foot per year
Estimated total annual electric consumption (based upon 75% of total BTU)[4]	2.25 million kilowatt hours per year
Estimated total annual natural gas consumption (based upon 25% of total BTU)	77,000 therms of natural gas per year
Estimated total annual energy consumption	30.73 billion BTU equivalent to 5,500 barrels of oil

[1] Includes space conditioning, service water heating and lighting. Energy used by appliances such as typewriters, computers, coffee makers, etc., is not included because of the large variability based upon the uses of specific occupants.

[2] It is likely that the actual structure would use less energy than shown here because these figures are based upon the maximum allowable limit of the energy budget compliance method of Title 24.

[3] BTU (British Thermal Unit): A standard unit for measuring heat. Technically, it is the quantity of heat required to raise the temperature of one pound of water 1° Fahrenheit (251.97 calories) at sea level.

[4] The assumed split between electricity and natural gas use is based upon predicted consumption rates of other San Francisco projects. However, this "split" is sensitive to the design used; actual consumption rates may differ considerably.

Note: Energy Conversion Factors:
one gallon gasoline = 125,000 BTU
one kilowatt (KWH) = 10,200 BTU assuming operational efficiency of 33% for fossil or nuclear fueled power plant
one therm = 100,000 BTU
one barrel of oil = 5,600,000 BTU

Daily and annual load distribution curves are not estimatable at this time due to the unavailability of design information. Since load curves are not governed by Title 24, no reasonable assumptions are readily available. It may be noted, however, that similar projects in San Francisco for which load curves have been developed show peak electrical consumption on hot August or September afternoons due to demand for cooling, which coincides with PG&E's system-wide peak.[3] Typical load curves for natural gas and electricity are shown in Figures 27 and 28, pages 108 and 109. Natural gas demand of other projects has been predicted to peak during cold January mornings, which does not coincide with the system-wide peak. The drop in electrical demand at the noon hour is due to smaller demand for appliance operation and cooling as workers stop for lunch. The actual load curves for the proposed project would be expected to differ in shape and magnitude of demand from those in Figures 27 and 28.

Cumulative increases in energy consumption in downtown San Francisco by approved and recently proposed projects (17.3 million square feet.; Appendix F, Table F-2, page A-55) would increase annual electrical consumption by more than 300 million kilowatt hours which would be approximately 13% of PG&E's projected systemwide increase over the next ten years.[4] This project would also increase annual natural gas consumption by more than 5.2 million therms. Total increase in building operation energy demand would be about 3.6 trillion BTU annually, equivalent to about 600,000 barrels of oil per year.

Cumulative demand for electricity by approved and recently proposed projects in downtown San Francisco would increase electrical demand in the PG&E service area by about 0.4%. PG&E's reserve margin, the amount of excess capacity over demand that serves as a safety allowance, is estimated at about 14% for 1982. This reserve margin is projected to rise to about 25% in 1983; as the Diablo Canyon nuclear power plan comes on line, then decline slowly during the late 1980's to about 18% in 1990. The additional electrical demand created by the project and other projects approved or under consideration by the City could be accommodated by existing and planned PG&E facilities.

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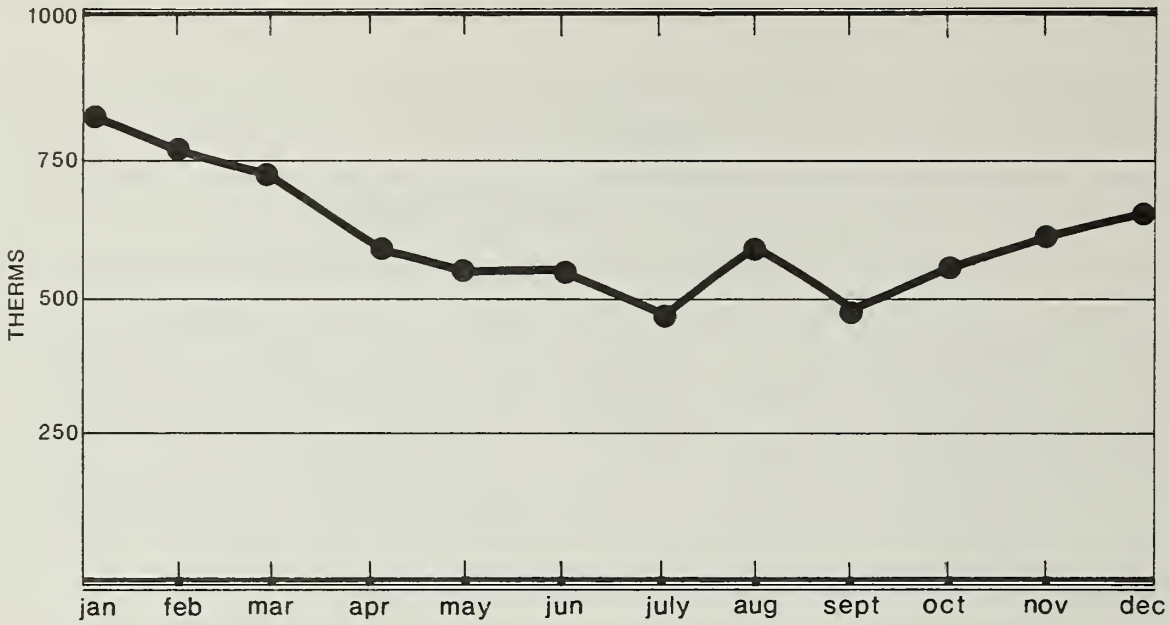
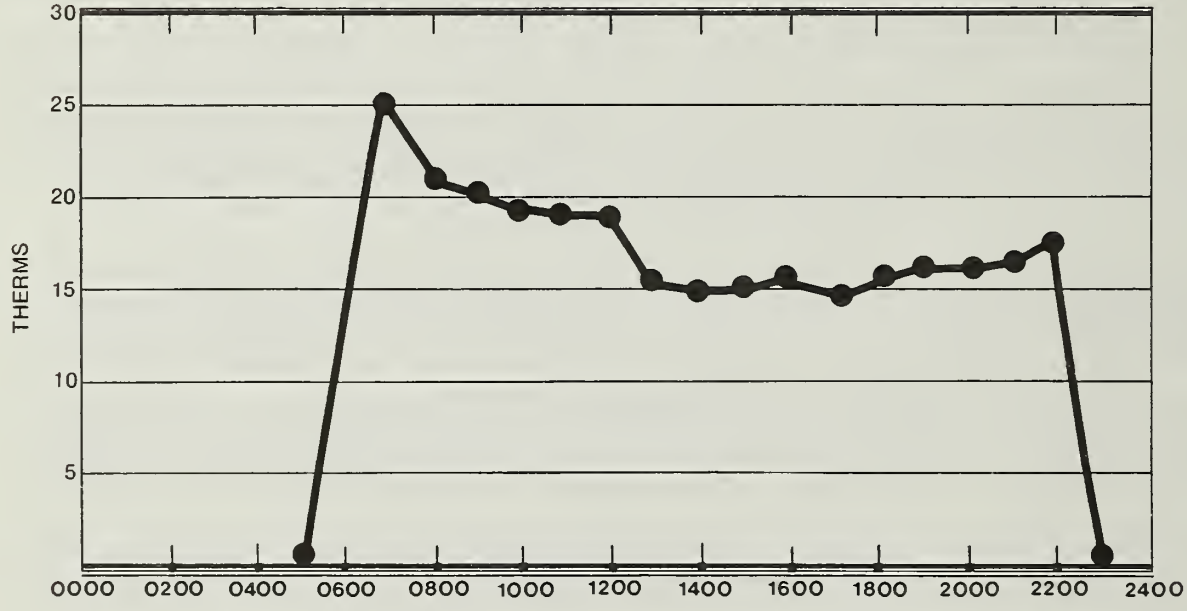
[1] State of California Energy Resources Conservation and Development Commission, Conservation Division, Energy Conservation Design Manual for New Nonresidential Buildings, October 1977.

[2] Al Deterville, Project Administrator, California Engineering Commission, Sacramento, California, telephone conversation, November 29, 1982.



MONTHLY CONSUMPTION

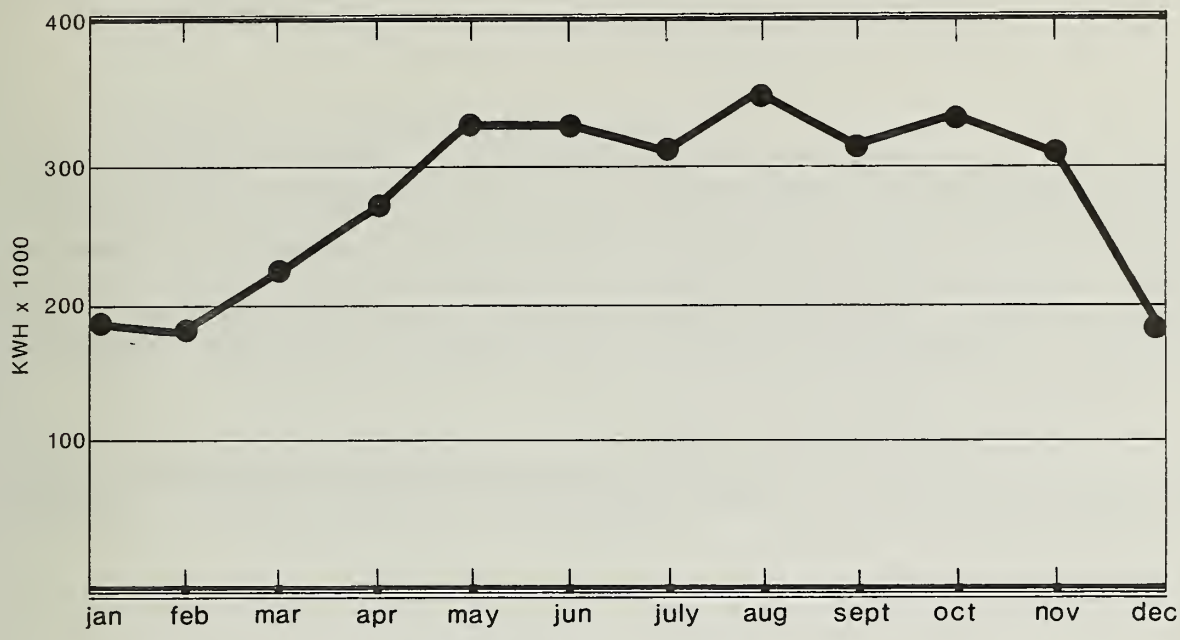


HOURLY CONSUMPTION

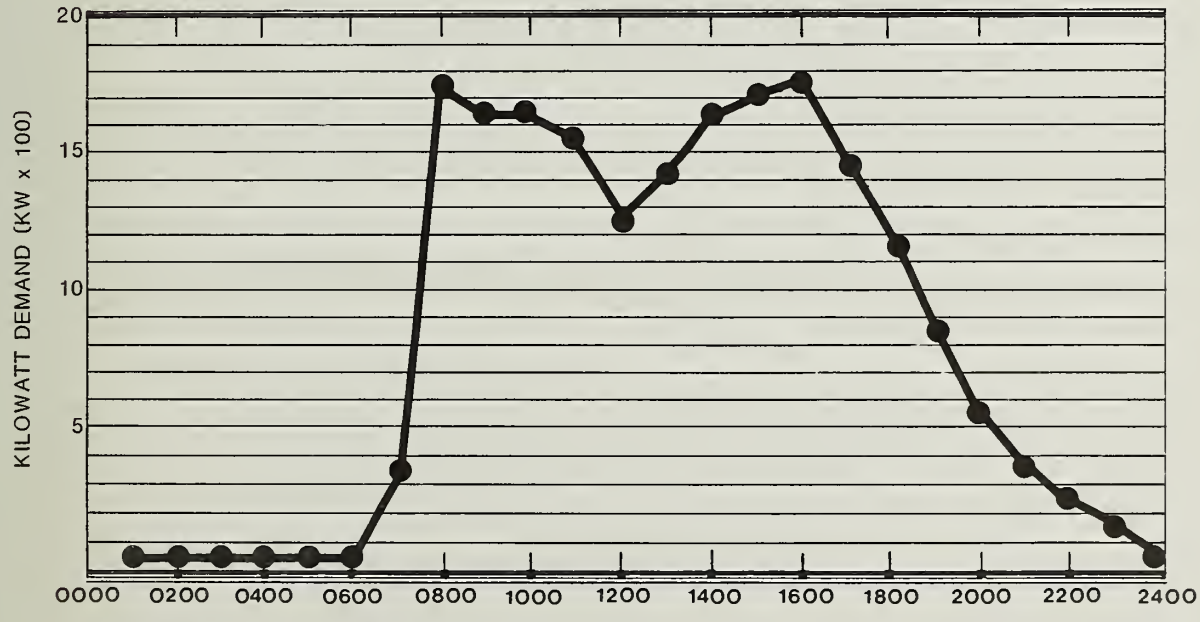
SOURCE: DEPARTMENT OF CITY PLANNING
FEIR, Spear and Main Street Office Building, San Francisco, May 1982

600 Harrison Street

TYPICAL GAS CONSUMPTION **FIGURE 27**



MONTHLY CONSUMPTION



HOURLY CONSUMPTION

SOURCE: DEPARTMENT OF CITY PLANNING
FEIR, Spear and Main Street Office Building, San Francisco, May 1982

600 Harrison Street

TYPICAL ELECTRICAL CONSUMPTION FIGURE 28

[3]Load curves for air conditioned office buildings in San Francisco tend to be similar across a wide range of building designs. This is because energy consumption rates correlate well with outside temperature and working hours. The load curves shown in Figures 27 and 28, page 108 and 109, were selected to provide an indication of the shape of the actual load curves, which cannot be calculated until the design work has proceeded further. Examples of similar load curves can be found in the Final EIR's for projects at 466 Bush (EE 81.175), Five Fremont Center (EE 80.36), 101 Montgomery (DR 80.24), and 101 California (CU 70.12).

[4]Pacific Gas and Electric Company, 1982, Forecast of the Demand for Electricty Within the Pacific Gas and Electric Company Service Area, 1982-2002; Electricity Technical Supplement.

J. HISTORIC AND CULTURAL RESOURCES

An archaeological evaluation of the project site was conducted and appears as Appendix I, pages A-65 through A-78 of this report.[1] The study indicates that neither a limited archival search nor an on-site field reconnaissance encountered any evidence of potentially significant cultural properties within the project site boundaries. Excavations required for foundations and the parking level of the proposed project would not be more than 15 feet below the surface. Based on the archaeological study and the depth of excavation proposed for the project, the potential for encountering cultural resources during construction is expected to be limited.

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[1] Allen G. Pastron, Ph.D., Archeo-Tec Consulting Archaeologists, Cultural Resources Evaluation, 600 Harrison Street Project, San Francisco, California, Oakland, California, January 26, 1983, 14 pages

K. GEOLOGY AND SEISMICITY

The project site would be excavated to about 13 feet below ground level. This would produce about 32,000 tons of artifical fill (sand, silt, clay and man-made rubble) and bedrock to be removed from the site. Site spoils would be transported by the shortest possible route to Highway 101 (probably along Harrison Street to the I-80 on-ramp at Fourth Street) and then to a disposal site, as yet undesignated, south of the City. Spillage of sandy materials from the trucks along the haul routes could create a safety hazard for two-wheeled vehicles, could be a source of windblown dust and could cause siltation of City storm drains.

Seismically, the site is relatively stable. Estimates of "strong" intensity of future groundshaking are based on a seismic event similar to that of the 1906 San Francisco earthquake.[1] The project area is in a seismically active region which annually experiences low to moderate magnitude earthquakes epicentered within the major fault zones. In 1979, a moderate earthquake (Richter magnitude 4.2) occurred along the San Andreas Fault and two moderate earthquakes (Richter magnitudes 4.8 and 5.9) occurred along the Calaveras Fault.[2] Three earthquakes of Richter magnitude 5.5 to 5.9 occurred along the Calaveras Fault in 1980.[3] Based on records of previous earthquakes, the groundshaking at the site during a seismic event the size of the 1906 San Francisco earthquake (Richter magnitude 8.3) would be "strong," involving cracking of masonry and brick work. Groundshaking intensity would vary from strong to violent within a three-block radius of the project site.[1]

For planning purposes, it is reasonable to assume a 59- to 105-year return period for this type of earthquake.[4] Since the bedrock on which the project would be founded is hard and strong below the 7- to 16-foot thick, highly fractured zone, ground motion would be of fairly low amplitude with correspondingly little damage to structures.[1] Nonstructural elements, such as bookcases, free-standing wall partitions, hung ceilings or hanging light fixtures, could become personal hazards during a large earthquake if not properly secured to prevent falling.

The building would be designed to meet the seismic standards of the San Francisco Building Code. To reduce direct hazard from groundshaking, non-structural elements such as hanging light fixtures, hung ceilings, wall partitions bookcases and mechanical

equipment would be firmly attached to prevent their falling during an earthquake, as required by the Building Code.

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[1] URS/John A. Blume and Associates, San Francisco Seismic Safety Investigation, San Francisco, California, June 1974, page 14 and Figure 3.

[2] Earthquakes in the United States, 1979, U.S. Geological Survey Circular 836, 1980-1981, pages B19, C19, C27.

[3] Preliminary Determination of Epicenters, Monthly Listings, U.S. Geological Survey, 1980-1981.

[4] Shedlock, K.M., R.K. McGuire and D.G. Herd, Earthquake Recurrence in the San Francisco Bay Region, California, from Fault Slip and Fault Moment, U.S. Geological Survey, Open-File Report 80-999, 1980.

L. GROWTH INDUCEMENT

At full operation, the project would provide about 960 permanent jobs, including office, managerial, retail, sales and maintenance positions. To the extent that the building is fully leased, and the availability of its space does not create permanent vacancies in other Bay Area office buildings, total employment in the Bay Area could additionally increase by about 1,010 permanent jobs through the multiplier effect.

The project would not require new construction or extension of public services or utility systems and would be built in an already developed urban area. Employee purchasing could stimulate employee-oriented retail activity in the proposed project area.

The project would represent an addition of not less than one percent of office space growth in downtown San Francisco. To the extent that the project would contribute to the attraction of new residents or commuters who otherwise would not have been attracted to San Francisco or the Bay Area, the demand for commercial, social and municipal services would be increased.

The proposed project would add 228,000 net new gross square feet of office space to the site, which, together with other office development, could stimulate additional office growth in the vicinity on lots currently used for parking or occupied by low-rise structures containing business support services (particularly in the South of Market area). In economic terms, the land use succession process occurs because the "highest and best use" of the land is something other than the present use. "Highest and best use" is defined as land use and land use intensity which will bring the highest price on rent, given current market conditions. The "highest and best use" is one that optimizes the allowable floor area, density and height permitted for the site, provided there is a market for the amount and type of space created.

V. MITIGATION MEASURES WHICH WOULD MINIMIZE THE POTENTIAL IMPACTS OF THE PROJECT

In the course of project planning and design, measures have been identified that would reduce or eliminate potential environmental impacts of the proposed project. Some of these measures have been or would be adopted by the project sponsor or project architects and contractors (mitigation measures included as part of the project and presented in the Initial Study are reproduced below), some may be implemented by public agencies, and the remainder are not included in the project. The City Planning Commission could require that some or all of these measures be included as conditions of project approval, if found to be warranted.

Each mitigation measure and its status is discussed below. Where a measure has not been included in the project, the reasons for this are discussed.

A. HOUSING

MITIGATION MEASURES INCLUDED IN THE PROPOSED PROJECT

The City Planning Commission's Office Housing Production Program stipulates mitigation of housing impacts. The project is estimated to add demand for 202 housing units. The project sponsor would cause 202 housing units to be constructed off-site.

B. TRANSPORTATION, CIRCULATION AND PARKING

MITIGATION MEASURES INCLUDED IN THE PROPOSED PROJECT

The project sponsor would implement a transportation management program including the following:

- Designate a permanent Transportation Coordinator as part of the building management staff
- Encourage the investigation and implementation of flex-time programs by providing information on the program's advantages, feasibility, etc.

- Encourage Transportation Coordinator to develop a parking priority system which favors short-term commerical parking

- Sell Muni Fast Passes and other monthly commute passes on-site

- Join with other South of Market developers to encourage improved transit service to the site

- Coordinate with RIDES and Golden Gate ride-sharing office to develop car and vanpool services.

The goal of the transportation program would be to reduce auto commuting about 35% and increase auto occupancy to about 1.5 (comparable to downtown travel patterns). If the transportation program goal is reached, the project's parking demand would be reduced to approximately 245 spaces. The project's parking garage would then accommodate about one-half of the total demand.

Within three years from completion of the project, the project sponsor would conduct a survey in accordance with methodology approved by the Department of City Planning to assess actual trip generation patterns of project occupants, and actual pick-up and drop-off areas for car poolers and van poolers. This survey would be made available to the Department of City Planning.

The project would be subject to the development fee imposed under Ordinance No. 224-81 (if that fee is sustained) and whatever other lawful measures which may be adopted by the Board of Supervisors for the purpose of generating funds to provide for mitigation of the incremental peak-hour transit congestion attributable to the project upon completion.

The project sponsor would contribute funds toward the construction of a well-lighted transit shelter outside the proposed building to improve the effectiveness of transit.

With respect to construction impacts, the project sponsor would ensure that safe and convenient pedestrian areas would be maintained throughout the construction period on

designated walkways around the project site. The delivery of equipment, materials, etc. would be prohibited during peak traffic flow periods (7:30 - 8:30 a.m. and 4:30 - 5:30 p.m.).

MITIGATION MEASURES NOT INCLUDED IN THE PROPOSED PROJECT

The project sponsor has rejected full use of the garage for general parking. The project sponsor would consider an alternative use of the parking level to increase the number of spaces available to the general public. About one-half of the spaces would be reserved for the use of building tenants. The other half of the spaces would be divided between general parking and car/vanpool parking. Priority would be given to car/vanpool spaces to encourage the use of pooled transportation.

The incorporation of valet parking has been rejected by the project sponsor. The sponsor believes that relatively few parking spaces could be added and would necessitate major alteration of the column spacing to accommodate them. Altered column spacing would necessitate a major structural redesign of the building which the sponsor does not wish to undertake.

The project sponsor has rejected the incorporation of a wider sidewalk on the Second Street side of the building because it would necessitate a major structural redesign which the sponsor does not wish to undertake. The proposed structure includes a street level setback along the half of the Second Street frontage closest to the corner of Harrison Street. This setback would be more than half the width of the existing sidewalk.

C. AIR QUALITY

MITIGATION MEASURES INCLUDED IN THE PROPOSED PROJECT

Those measures identified in the Transportation mitigation section of this report which would reduce traffic volumes or congestion would also reduce air pollutant emissions. These include encouragement of transit use by employees, flexible work hours, preferential parking for carpools, van pools and bicycles, and contribution of funds for maintaining and augmenting transit service. Also, construction vehicle traffic would be prohibited during peak traffic hours.

D. NOISE

MITIGATION MEASURES NOT INCLUDED IN THE PROPOSED PROJECT

The following mitigation measures are under consideration by the project sponsor:

Mufflers or shrouds around jackhammers and impact wrenches could be incorporated and could reduce the impacts described in Section IV.G Noise Impacts, page 100, by 10-15 dBA. The sponsor would determine the type of measures used when the building permit is granted by the City.

The sponsor would notify all offices within 100 feet of the project vicinity of the times and days of construction activity. This would allow businesses, to the exent necessary and possible, to adjust their schedules around the construction activity.

With the exception of the adjacent Pacific Telephone building, the majority of existing adjacent buildings appear to be currently used for non-sensitive land uses such as warehouse/storage and light manufacturing. However, new development projected for the immediate project vicinity (i.e. 400 Second Street and the Marathon Project at Second and Folsom) may have occurred by the time the proposed project is built. Treatment of existing buildings in the form of noise shields over the windows would be done on a building by building basis to determine which interiors could be affected and the possible cost involved. Final determination would be made when the building permit is issued by the City.

Erection of a solid eight- to ten-foot fence along the northern property boundary would significantly reduce noise impacts impacts to the Pacific Telephone building and lower levels of adjacent buildings. Because the site is approximately five feet above the first floor grade elevation of the one-story Pacific Telephone building this fence would significantly reduce the emission of ground-level noise from the construction site to that building. This fence would also shield activities such as concrete pumping and foundation excavation from the Pacific Telephone building and lower levels of adjacent buildings. The use of impact wrenches on upper floors of the proposed project and other activities taking place above grade would not be reduced by the construction fence. However, these activities would be shielded by the new building itself as construction progressed .

E. ENERGY

MITIGATION MEASURES INCLUDED IN THE PROPOSED PROJECT

The project sponsor has not reached any formal decisions concerning mitigation measures for energy consumption. However, the following energy mitigation measures are planned to be included in the proposed project:

- four-story entry lobby/solarium
- high-efficiency ballasts for fluorescent lighting
- high-efficiency motors
- economizer cycle on air handlers
- computerized energy management
- fluorescent lighting (wattmisers) with switching from four bulbs per fixture to two
- energy-efficient outdoor lighting
- timed switches on closet and storeroom lights

MITIGATION MEASURES NOT INCLUDED IN THE PROPOSED PROJECT

A number of potential mitigation measures would be considered as part of the design process. These measures would include, but not necessarily to be limited to the following measures:

- increased use of daylighting
- solar water heating
- passive solar features
- load shedding
- individual utility metering

Final decisions would be made on the basis of life cycle costing and compatibility with the overall design; a separate report would be prepared and made available to the Department of City Planning prior to the application for the building permit which would explain the decisions regarding which energy conservation features would be included in the final design.

F. HISTORIC AND CULTURAL FEATURES

MITIGATION MEASURE INCLUDED IN THE PROPOSED PROJECT

If historical or archaeological resources are discovered during construction of the proposed project, the contractor would stop work in the area of the find and select a professional archaeologist to permit professional evaluation of the find and determine the appropriate subsequent steps to be taken. The Office of Environmental Review, the President of the Landmarks Preservation Advisory Board, the Director of the Maritime Museum in San Francisco, and the Regional Archaeological Site Survey Office at Sonoma State College at Rohnert Park, California would be notified. Any artifacts found would become the property of the project sponsor. All recommendations would be sent to the State Office of Historic Preservation. Construction that may be damaging to historical resources discovered would be suspended for a maximum of four weeks to permit inspection, recommendations and retrieval, if judged appropriate.

G. GEOLOGY AND SEISMICITY

MITIGATION MEASURES INCLUDED IN THE PROPOSED PROJECT

Recommendations regarding site grading, placement of fill and drains, designs for foundations and pavement, wall strength, waterproofing and construction specified in a site-specific geotechnical report and would be followed to maintain efficient and safe construction within San Francisco Building Code Standards.[1] The excavation would be kept free of loose debris to allow satisfactory cleaning and inspection.

The City storm sewer system would be protected from sedimentation during the construction period by sediment control measures such as sweeping adjacent paved areas to remove sand, watering the site to settle dust, and placing straw bales around side-drain inlets to prevent mud or debris from entering the inlets.

H. HAZARDS

MITIGATION MEASURE INCLUDED IN THE PROPOSED PROJECT

An evacuation and emergency response plan would be developed by the project sponsor or building management staff, in consultation with the Mayor's Office of Emergency Services to ensure coordination between the City's emergency planning activities and the project's plan and to provide for building occupants in the event of an emergency. The project's plan would be reviewed by the Office of Emergency Services and implemented by building management insofar as feasible before issuance by the Department of Public Works of final building permits.

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[1] A copy of this report will be filed with the City's Office of Environmental Review and will be available for public review at 450 McAllister Street, fifth floor.

VI. SIGNIFICANT ENVIRONMENTAL EFFECTS THAT CANNOT BE AVOIDED IF THE PROJECT IS IMPLEMENTED

This chapter identifies impacts that could not be eliminated or reduced to an insignificant level by mitigation measures included as part of the proposed project, or other mitigation measures that could be implemented, as described in Chapter V, Mitigation Measures, page 115.

CUMULATIVE OFFICE DEVELOPMENT

The project would be part of a trend of denser development in the South of Market area and in Downtown San Francisco. Cumulative increases in the amount of office space would continue regional growth in service-sector and office headquarters activities and employment. The project would contribute to cumulative traffic increases Downtown and cumulative increases in passenger loadings on BART, Muni and other transit agencies.

VII. ALTERNATIVES TO THE PROPOSED PROJECT

A. ALTERNATIVE ONE: NO-PROJECT

This alternative would involve no change to the project site as it now exists. The 220-space surface parking lot would remain in use for an unspecified length of time. This alternative would hold open future options for the land to be developed under other permitted uses in the M-1 (Light Industrial) District.

With the retention of the project site in its present state, none of the impacts associated with the proposed 600 Harrison Street project would occur. The existing transportation and air quality conditions (see Section III.D. Transportation, Circulation and Parking, page 35; and III.E. Air Quality, page 43) would continue on streets around the site. The peak hour level of service on the streets surrounding the project site would remain unchanged and Muni load factors would be lower than if the proposed project were implemented. Current levels of parking demand, noise, air pollution, energy consumption, wind and visual effects would remain unchanged. The no-project alternative would provide no additional employment, no increase of taxable revenues accruing to the City, and no increased cost to the City for supplying services.

The project sponsor has rejected this alternative because the site is currently vacant and used for surface parking, and, in the opinion of the project sponsor, would perpetuate an inefficient and wasteful use of land resources within an area of new downtown commercial development. This alternative would not provide maximum investment potential of the site. The project sponsor wishes to locate the proposed project in San Francisco, but out of the Financial District, in order to offer the lower rental rates. The area around the Second/Harrison Street intersection is a district that is experiencing an influx of new office development. These objectives would not be met by the no-project alternative.

B. ALTERNATIVE TWO: INTERIM CONTROLS; NO EXCEPTIONS TO PLANNING CODE

This alternative would consist of a structure that would have a similiar exterior design as the proposed project but would comply with the City's Planning Code requirements for off-street parking (Section 151). Incorporating on-site parking into the project design would reduce total office space to about 128,000 gsf. The lobby would remain on the ground floor which would also contain 10,000 gsf of retail space. Parking facilities for 235 cars would occupy the second and third floors with no subsurface parking. Office space would occupy the fourth, fifth and sixth floors, as well as part of the ground floor. About 3,000 gsf of ground floor space would be needed for access ramps to parking.

According to the City Planning Commission's Office Housing Production Program (OHPP), the housing requirement for this alternative would be 114 units.[1] As with the proposed project, this alternative would respond to the OHPP requirement by providing 114 housing units to be constructed off-site.

The inclusion of above-ground parking would be necessary to avoid the difficult and costly excavation of solid bedrock beyond the one subsurface level of parking proposed for the project. The cost of construction would be increased due to the special materials and equipment needed for the above-ground parking levels (special concrete construction, sprinkler systems). Rents would be higher to cover these special construction costs.

Alternative Two represents an office structure with associated required off-street parking that could be accommodated by slightly altering the building envelope. The alterations would include loss of the atrium and some setbacks, making the structure look bulkier near ground level. This alternative would increase the number of on-site parking spaces by 119. The reduction of office space would generate fewer daily person-trips and fewer peak hour trips. Traffic-generated noise would not be audibly reduced; air quality impacts would be slightly increased due to the increase in on-site parking spaces, but the increase would not be of measurable magnitude. Energy consumption would be less than the proposed project due to decreased amounts of air-conditioned space. Since the overall height and building design for this alternative would be the same as the proposed project visual impacts would be similar except for the greater apparent bulk on parking levels two and three.

Incorporating on-site parking into the project design would substantially relieve or eliminate parking demands generated by the project and reduce cumulative parking impacts associated with increased office development. If this alternative, or any alternative other than the no-project were implemented, the 220-space parking lot now existing on the project site would be removed, reducing available parking in the area.

This alternative was rejected by the project sponsor because it would substantially reduce the available office space, increase construction and rental costs, and limit the return on project investment. The project sponsor believes that the building design, while remaining substantially the same in terms of volume, would be reduced in quality by the increase in apparent bulk and the loss of some setbacks. This alternative would not meet the project sponsor's objectives.

C. ALTERNATIVE THREE: MIXED USE; COMBINED OFFICE, RETAIL AND RESIDENTIAL

This alternative would consist of two structures that would contain the same total gross square feet (gsf) of floor space as the proposed project. Housing units would be contained in a building with both Harrison Street and Second Street frontages. Office and retail space would be contained in an adjacent building fronting on Harrison Street. Parking spaces would be provided beneath both structures.

The office structure would consist of five and a half floors of office space with an atrium similar to the proposed project. Retail space would occupy about 40% of the ground floor. A single level of subsurface parking would be provided beneath this structure. The residential structure would contain 88 dwelling units on nine floors. Dwelling units would be designed with about eight-foot high ceilings to keep the building within the 80-foot height limit. The building would be L-shaped to provide an open space area facing Dow Place. One level of subsurface parking would be provided beneath this structure. Space allocations for this alternative would be as follows:

Retail:	About 10,000 gsf
Office:	About 147,500 gsf
Housing:	About 79,800 gsf
Parking:	About 43,800 gsf to accommodate 116 parking spaces (88 for the housing units and 28 for the commercial units).

The provision of housing is subject to approval by the City Planning Commission as a conditional use in a M-1 district. Section 215(a) of the City Planning Code indicates that the number of dwelling units permitted on any lot in a M District may not exceed that allowed in the nearest R (residential) District. The nearest R District is RC-2, two blocks south of the project site. The maximum density permitted for RC-2 is one dwelling unit for each 600 square feet of lot area. For the project site (43,800 square feet) a maximum of 73 units could be accommodated without requesting conditional use authorization for a Planned Unit Development (PUD). With a PUD, housing density could not be increased beyond that authorized for the next most dense district (RC-3, one dwelling per 400 square feet of lot area).[2] The density of units in this alternative is about one per 500 square feet of lot area. This alternative would require a PUD.

According to the City Planning Commission's Office Housing Production Program (OHPP), the housing requirement for this alternative would be 132 units.[1] This alternative would provide 88 dwelling units, the remaining 44 units would be provided off-site.

The Planning Code specifies one off-street parking space for every 500 square feet of usable office or retail space and one for every dwelling unit in a RC-2 District (Section 151). Therefore, this alternative would require a total of 351 parking spaces. This alternative would provide 235 fewer spaces than required in the Planning Code and would not comply with off-street parking requirements. Like the proposed project, Alternative Three would require a variance authorization.

The reduction of office space and introduction of residential space would generate fewer daily person-trips and fewer peak hour trips. Traffic-generated noise would not be audibly reduced; air quality would be improved, but the improvement would not be of measurable magnitude. An increase in energy consumption would be likely due to the increased residential use on the site compared to the proposed project. Demand for public services would also increase due to the addition of residential units on site. Visual impacts would be similar to the proposed project.

This alternative was rejected by the project sponsor because it would conflict with the sponsor's objective of enhancing the economic vitality of the area. The inclusion of residential units in the proposed project would require installation of additional utilities (elevators, plumbing, wiring), security and related services that would increase construction costs and rent while reducing usable floor area.

The project sponsor believes the residents would be inadequately served by the limited residential support services available. The nearest grocery, drugstore and similar retail services would be several blocks away at Yerba Buena Center; medical and dental services, laundries and cleaners, recreation and entertainment, and similar types of personal services would not be available in the immediate area. To market housing units successfully, the project sponsor believes space for such activities and services would need to be provided within the project. This would further reduce usable floor area while increasing costs to residents through increased construction and maintenance costs. The project sponsor also believes it would be difficult to successfully market housing units because of the visual and noise effects of the Interstate 80 freeway system within 1,000 feet of the project site.

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[1] $\frac{128{,}000 \text{ gross square feet}}{250} \times 40\% \div 1.8 = 114$ units (rounded up)
San Francisco Department of City Planning, Revised Guidelines for Administering the Housing Requirements Placed on Office Development under OHPP, December 7, 1981, page 5.

[2] City and County of San Francisco, Planning Code, Section 304(d)4, 1979 Edition.

[3] $\frac{147{,}500 \text{ gfs}}{250} \times 40\% - 1.8 = 132$ units (rounded up), San Francisco, DCP, op. cit.

VIII. EIR AUTHORS AND PERSONS CONSULTED

A. PROPOSED PROJECT AND EIR

Author of Environmental Impact Report
San Francisco Department of City Planning
450 McAllister Street
San Francisco, California 94102
Environmental Review Officer: Alec S. Bash
Assistant Environmental Review Officer: Barbara Sahm
EIR Coordinator: Diane Oshima

Author of Preliminary Draft Environmental Impact Report
Environmental Impact Planning Corporation
319 Eleventh Street
San Francisco, California 94103
Project Manager: George Burwasser
Assistant Project Manager: Suzanne McAdams

Project Sponsor
Braemar Holdings Corporation, S.A.
592 Vallejo Street, Suite #1
San Francisco, California 94133

Project Architects
Tai Associates/Architects
665 Bush Street
San Francisco, California 94108
Project Architect: Steve Weir

B. PERSONS CONSULTED

City and County of San Francisco

San Francisco Fire Department
260 Golden Gate Avenue
San Francisco, California 94102
(415) 861-8000
Edward J. Phipps, Assistant Chief
Support Services

San Francisco Department of Public Works
Traffic Engineering Division
460 McAllister Street
San Francisco, Califronia 94102
Russell Lee

San Francisco Water Department
425 Mason Street
San Francisco, California 94102
(415) 558-04101
George Nakagaki, Manager
City Distribution Division

San Francisco Municipal Railway
949 Presidio Avenue
San Francisco, California 94115
Charles Romeyn, Schedules Department

Other

Real Estate Research Council of Northern California
57 Post Street
San Francisco, California 94105
James Davis, Executive Director

AC Transit
Division of Planning and Research
1140 45th Street
Emeryville, California
(415) 835-9801
Gene Gardner, Planner

APCOA, Inc.
35 Grove Street
San Francisco, California
John Wagner

Bay Area Rapid Transit District
800 Madison Street
Oakland, California
(415) 465-4100
John Stamas, Planner
Ward Belding, Planner

California Engineering Commission
Sacramento, California
Al Deterville

Caltrans
150 Oak Street
San Francisco, California
(415) 557-1840
Scott MacCalden, Senior Engineer
Ben Chuck, Senior Planner

Golden Gate Transportation District
1011 Anderson Street
San Rafael, California 94902
Alan Zahradnik, Planner

San Mateo Transit District
400 South El Camino Real
San Mateo, California 94402
(415) 573-2349
Gregory Kipp, Planner

California Archaeological Site Survey
Department of Anthropology
Sonoma State University
Rohnert Park, California 94928
Arlyn Goldner, Staff Archaeologist

Don Hillebrandt Associates
604 Mission Street
San Francisco, California
Gary Carpenter

Coldwell Banker, Inc.
1 Embarcadero Center
San Francisco, California 94111
Thomas Tabor

Recht Hausrath and Associates
1212 Broadway
Oakland, California 94612
(415) 839-8383

Tai Associates/Architects
665 Bush Street
San Francisco, California 94108
Carl Kinczel

IX. DISTRIBUTION LIST

FEDERAL AND STATE AGENCIES

State Office of Intergovernmental Management (10)
State Clearinghouse
1400 - Tenth Street
Sacramento, California 95814
Attn: Anna Polvos

Air Quality Resources Board
Regional Programs Division
1102 Q Street
Sacramento, CA 95814
Attn: General Project Sections

REGIONAL AGENCIES

Association of Bay Area Governments
Hotel Claremont
Berkeley, California 94705

Bay Area Air Quality Management District
939 Ellis Street
San Francisco, California 94109
Attn: Irwin Mussen

Bay Area Rapid Transit District
800 Madison Street
Oakland, California 94607

California Archaeological Site Inventory
Department of Anthropology
Sonoma State University
Rohnert Park, CA 94928

Golden Gate Bridge Highway & Transportation District
P.O. Box 9000, Presidio Station
San Francisco, California

Alameda-Contra Costa Transit District
508 - 16th Street
Oakland, CA 94612

Metropolitan Transportation Commission
Hotel Claremont
Berkeley, California 94705

Caltrans
130 Oak Street
San Francisco, CA 94102

San Mateo County Transit District
400 South El Camino
San Mateo, California 94402

CITY AND COUNTY OF SAN FRANCISCO

San Francisco City Planning Commission
450 McAllister, 5th Floor
San Francisco, California 94102
Lee Woods, Commission Secretary
Toby Rosenblatt, President
Susan Bierman
Roger Boas
Norman Karasick, Alternate
Jerome Klein
Yoshio Nakashima
Rudy Nothenberg
Eugene Kelleher, Alternate
C. Mackey Salazar

Landmarks Preservation Advisory Board
100 Larkin Street
San Francisco, CA 94102
Jonathan Malone, Secretary
Patrick McGrew, President
Phillip P. Choy
Elizabeth de Losada
David M. Hartley
Carolyn Klemeyer
Jean E. Kortum
Ann Sabiniano
Walter Sontheimer
John Ritchie

Bureau of Building Inspection
450 McAllister Street
San Francisco, California 94102
Attn: Robert Levy, Superintendent

CITY AND COUNTY OF SAN FRANCISCO
(continued)

Water Department
Distribution Division
425 Mason Street
San Francisco, CA 94102
Attn: George Nakagaki, Manager

San Francisco Municipal Railway
Muni Planning Division
949 Presidio Avenue, Room 204
San Francisco, CA 94115
Attn: Peter Straus

San Francisco Committee for
Utility Liaison on Construction
and Other Projects (CULCOP)
c/o GES - Utility Liaison
City Hall, Room 363
San Francisco, CA 94102
Attn: Joseph Corollo

San Francisco Department of
Public Works
Traffic Engineering Division
460 McAllister Street
San Francisco, CA 94102
Attn: Scott Shoaf

San Francisco Fire Department
260 Golden Gate Avenue
San Francisco, California 94102
Attn: Ed Phipps, Chief
Division of Planning
and Research

San Francisco Public Utilities
Commission
Bureau of Energy Conservation
949 Presidio Avenue, Room 111
San Francisco, CA 94115
Attn: Robin Calhoun, Director

San Francisco Public Utilities
Commission
City Hall, Room 287
San Francisco, CA 94102
Attn: Rudy Nothenberg

San Francisco Real Estate Dept.
450 McAllister Street, Room 600
San Francisco, CA 94102
Attn: Wallace Wortman
Director of Property

Mayor's Economic Development Council
480 McAllister Street
San Francisco, CA 94102
Attn: Mr. Richard Goblirsch

Bureau of Engineering
45 Hyde Street, #222
San Francisco, CA 94102
Attn: Ray Danehy

MEDIA

San Francisco Bay Guardian
27000 - Nineteenth Street
San Francisco, CA 94110
Attn: Patrick Douglas, City Editor

San Francisco Chronicle
925 Mission Street
San Francisco, California 94103
Attn: Marshall Kilduff

San Francisco Examiner
110 - Fifth Street
San Francisco, CA 94103
Attn: Gerald Adams

San Francisco Progress
851 Howard Street
San Francisco, CA 94103
Attn: Mike Mewhinney

The Sun Reporter
1366 Turk Street
San Francisco, CA 94115

LIBRARIES

Documents Department
City Library - Civic Center
San Francisco, CA 94102
Attn: Faith Van Liere

Environmental Protection
Agency Library
215 Fremont Street
San Francisco, CA 94105
Attn: Jean Circiello

LIBRARIES
(continued)

Government Documents Section
Stanford University
Stanford, CA 94305

Government Publications Department
San Francisco State University
1630 Holloway Avenue
San Francisco, CA 94132

Hastings College of the Law - Library
198 McAllister Street
San Francisco, CA 94102

Institute of Governmental Studies
1209 Moses Hall
University of California
Berkeley, CA 94720

Golden Gate University
Library
536 Mission St.
San Francisco, CA 94105

GROUPS & INDIVIDUALS

AIA
Northern California Chapter
790 Market Street
San Francisco, CA 94102

Bay Area Council
348 World Trade Center
San Francisco, CA 94111

Bendix Environmental Research, Inc.
1390 Market Street, Suite 902
San Francisco, CA 94102

Peter Bosselman
Environmental Simulation Laboratory
316 University Hall
University of California
Berkeley, CA 94720

Brobeck, Phleger, Harrison
One Market Plaza
San Francisco, CA 94105
Attn: Michael Rushman

David Capron
Lincoln Property Company
220 Sansome Street
San Francisco, CA 94104

Consumer Action
1417 Irving
San Francisco, CA 94122
Attn: Kay Pachtner

Joseph Coriz
2853 - 22nd Street
San Francisco, CA 94110

Calvin Dare
Cushman Wakefield
555 California Street, Suite 2700
San Francisco, CA 94104

Downtown Association
582 Market Street
San Francisco, CA 94104
Attn: Lloyd Pflueger

Downtown Senior Social Services
295 Eddy Street
San Francisco, CA 94102

Environmental Planning & Research, Inc.
649 Front Street
San Francisco, CA 94111
Attn: Leslie de Boer

Environmental Science Associates
1291 E. Hillsdale Boulevard
Foster City, CA 94404
Attn: Jo Julin

Friends of the Earth
1045 Sansome Street
San Francisco, CA 94111
Attn: Connie Parrish

The Foundation for San Francisco's
Architectural Heritage
2007 Franklin Street
San Francisco, CA 94109
Attn: Grant Dehart

Charles Gill
315 Ivy Street
San Francisco, CA 94102

Gray Panthers
50 Fell Street
San Francisco, CA 94102
Attn: Mr. Shaw

GROUPS & INDIVIDUALS (cont'd)

Gruen, Gruen + Associates
564 Howard Street
San Francisco, CA 94105

Heller, Ehrman, White & McAuliffe
44 Montgomery Street, 32nd Floor
San Francisco, CA 94104
Attn: Robert L. Gibney, Jr.

Sue Hestor
4536 - 20th Street
San Francisco, CA 94114

Carl Imparato
1205 Garfield
Albany, CA 94705

David Jones
241 Bartlett
San Francisco, CA 94110

Paula Lamb
822 Masonic Avenue
San Francisco, CA 94117

Chris Lavdiotis
1919 - 28th Ave.
San Francisco, CA 94116

League of Women Voters
12 Geary Street, Room 605
San Francisco, CA 94108

Legal Assistance to the Elderly
944 Market Street, #803
San Francisco, CA 94102

Robert Meyers Assoc.
5826 Balboa Drive
Oakland, CA 94611

Gerald Owyang
1517 Reed Ave., #2
San Diego, CA 92109

Pillsbury, Madison & Sutro
P. O. Box 7880
San Francisco, CA 94120
Attn: Abby Staeble

San Francisco Tomorrow
728 Montgomery Street, #34
San Francisco, CA 94111
Attn: Suzanne Smith

San Franciscans for Reasonable Growth
88 First Street
San Francisco, CA 94105
Attn: Tony Kilroy

John Sanger & Associates
2340 Market Street
San Francisco, CA 94114

Senior Escort Program
South of Market Branch
814 Mission Street
San Francisco, CA 94103

Sierra Club
530 Bush Street
San Francisco, CA 94108
Attn: Becky Evans

Kent E. Soule
Chickering and Gregory
3 Embarcadero Center, 23rd Floor
San Francisco, CA 94111

Tenants & Owners Development Corp.
230 Fourth Street
San Francisco, CA 941053
Attn: John Elberling

Paul Thayer
1033 Stanyan
San Francisco, CA 94117

Timothy Tosta
333 Market Street, Suite 2230
San Francisco, CA 94105

Steven Weicker
899 Pine Street, #1610
San Francisco, CA 94108

Women's Chamber of Commerce
681 Market Street, Room 992
San Francisco, CA 94105

San Francisco Forward
640 Market Street
San Francisco, CA 94104
Attn: Frank Noto

Planning Analysis and Development
530 Chestnut Street
San Francisco, CA 94133
Attn: Gloria Root

GROUPS & INDIVIDUALS (cont'd)

Mrs. G. Bland Platt
339 Walnut Street
San Francisco, CA 94118

Charles Hall Page and Associates
364 Bush Street
San Francisco, CA 94104

David P. Rhoades
44 Montgomery Street, Suite 547
San Francisco, CA 94104

San Francisco Beautiful
41 Sutter Street
San Francisco, CA 94104
Attn: Mrs. H. Klussman, President

San Francisco Building & Construction
Trades Council
400 Alabama Street, Room 100
San Francisco, CA 94110
Attn: Stanley Smith

San Francisco Chamber of Commerce
456 California Street
San Francisco, CA 94105
Attn: Richard Morten

San Francisco Ecology Center
13 Columbus Avenue
San Francisco, CA 94111

San Francisco Junior
Chamber of Commerce
251 Kearny Street
San Francisco, CA 94108

San Francisco Labor Council
1855 Folsom Street
San Francisco, CA 94103
Attn: Bernard Speckman

San Francisco Planning and Urban
Research Association
312 Sutter Street
San Francisco, CA 94108

San Francisco Convention and
Visitors Bureau
1390 Market Street, Suite 260
San Francisco, CA 94102
Attn: R. Sullivan, Manager

Jeff Vance
Campeau Corp. of California
681 Market Street
San Francisco, CA 94105

Elmer Johnson
Building Owners & Managers
690 Market Street
San Francisco, CA 94104

Building Service Employees
Union, Local 87
240 Golden Gate Avenue
San Francisco, CA 94102

Marie Zeller
Whisler-Patri
590 Folsom Street
San Francisco, CA 94105

Donald Head
50 Alta
San Francisco, CA 94133

ADJACENT PROPERTY OWNERS

Eddie Mason Company
c/o Peter Cahill
350 Sansome Street
San Francisco, CA 94104

301 Second Street Associates
c/o Marathon Development
California, Inc.
595 Market Street, #1330
San Francisco, CA. 94105

654 Associates
Lucasfilm Properties
P.O. Box 2009
San Francisco, CA 941075

590 Harrrison Street Associates
c/o Marathon Development
California, Inc.
595 Market Street, #1330
San Francisco, CA 941075

Moccomat Beverage Systems, Inc.
2278 N. Elston Avenue
Chicago, IL 60614

Frank Schrader Investment Company
647 Harrison Street
San Francisco, CA 94107

Young Ng Ying
Yee Mei Cheung
c/o Jack Chan
1598 Union Street
San Francisco, CA 94123

Winneroth, Nellie et al.
210 Post Street
San Francisco, CA 94108

APPENDIX A

DEPARTMENT OF CITY PLANNING 450 McAllister St. - 5th Floor
(415)558-5261

NOTICE THAT AN
ENVIRONMENTAL IMPACT REPORT
IS DETERMINED TO BE REQUIRED

Date of this Notice: September 10, 1982

Lead Agency: City and County of San Francisco, Department of City Planning
450 McAllister St. - 5th Floor, San Francisco CA 94102

Agency Contact Person: Diane Oshima **Tel:** (415) 558-5261

Project Title: 82.241E: Office Project **Project Sponsor:** Braemer Holdings

Project Contact Person: Tai Associates

Project Address: 2nd and Harrison Streets, northeast corner

Assessor's Block(s) and Lot(s): Block 3750 Lot 73

City and County: San Francisco

Project Description: New construction of six-story, approximately 238,000 square foot structure (228,000 square feet office; 10,000 square feet retail) on existing parking lot, requiring an off-street parking variance.

THIS PROJECT MAY HAVE A SIGNIFICANT EFFECT ON THE ENVIRONMENT AND AN ENVIRONMENTAL IMPACT REPORT IS REQUIRED. This determination is based upon the criteria of the Guidelines of the State Secretary for Resources, Sections 15081 (Determining Significant Effect), 15082 (Mandatory Findings of Significance) and 15084 (Decision to Prepare an EIR), and the following reasons, as documented in the Initial Evaluation (initial study) for the project, which is on file at the Department of City Planning:

Please see attached initial study

Deadline for Filing of an Appeal of this Determination to the City Planning Commission: September 20, 1982.

An appeal requires 1) a letter specifying the grounds for the appeal, and 2) a $35.00 filing fee.

Alec S. Bash, Environmental Review Officer

ER5 6/80

FINAL
INITIAL STUDY
TAI ASSOCIATES
SECOND AND HARRISON PROJECT
82.241E
SEPTEMBER 10, 1982

I. PROJECT DESCRIPTION

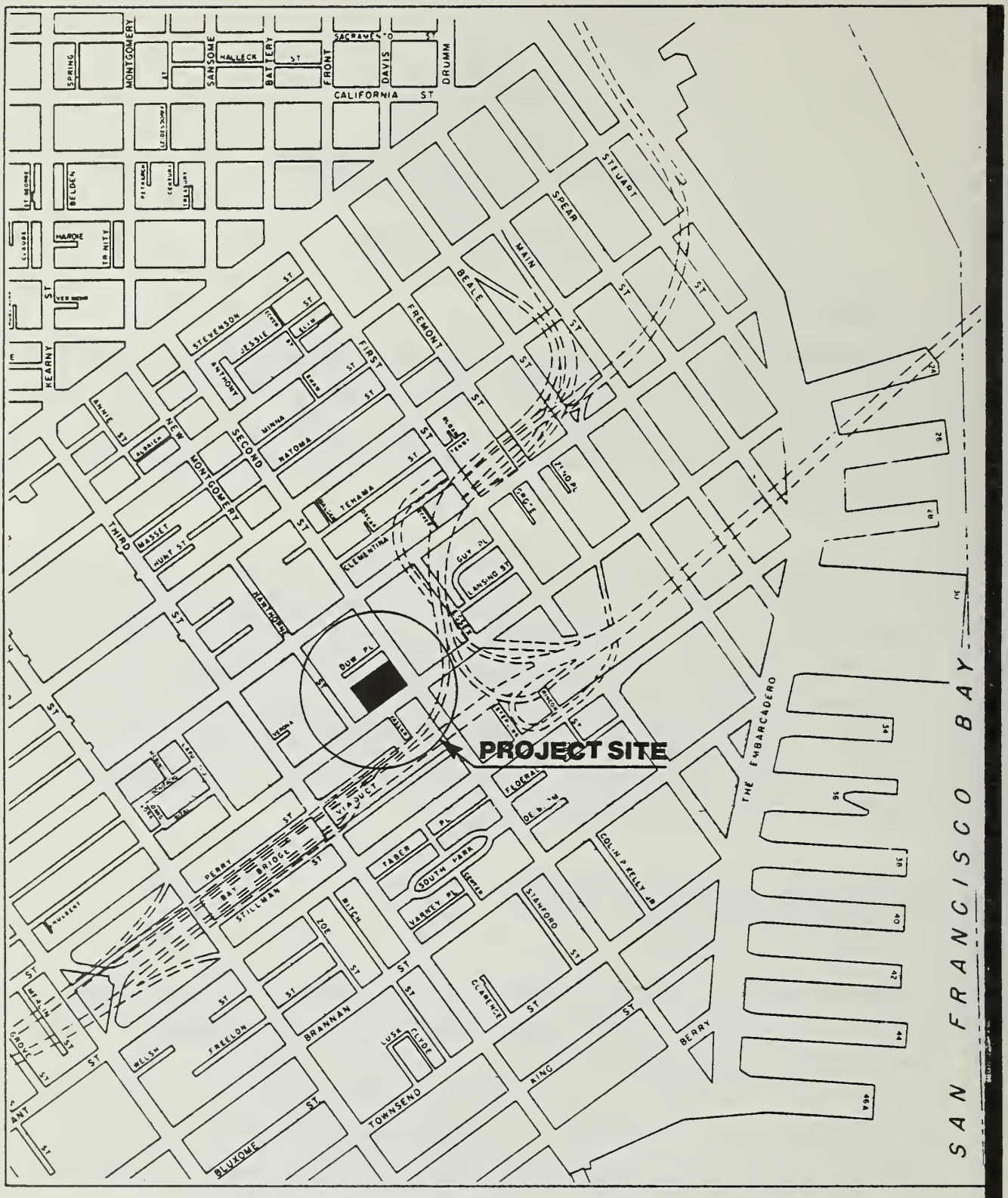
The Second and Harrison Project would be located on Assessors Block 3750, Lot 73 at the northwest corner of the Second/Harrison Street intersection in a M-1 (Light Industrial) District (Figure 1, page 2). The 43,862.5 square-foot site is close to freeway access ramps and is currently occupied by an asphalt parking lot which provides approximately 150 public parking spaces.

The project sponsor, Braemar Holdings, SA, proposes to construct a six-story office building including ground floor retail space (Figure 2, page 3). The structure would be 78 feet high (Figure 3, page 4) and would cover approximately 38,000 square feet of ground area. It would contain approximately 228,000 gross square feet of office floor area and 10,000 gross square feet of retail floor area (Figures 4 and 5, pages 5 and 6). Parking for 114 vehicles would be provided in one basement level excavated to approximately 12 feet below the surface (Figure 6, page 7). Access to parking facilities, loading facilities and pedestrian access would be from Harrison Street.

II. SUMMARY OF POTENTIAL EFFECTS

A. SIGNIFICANT EFFECTS

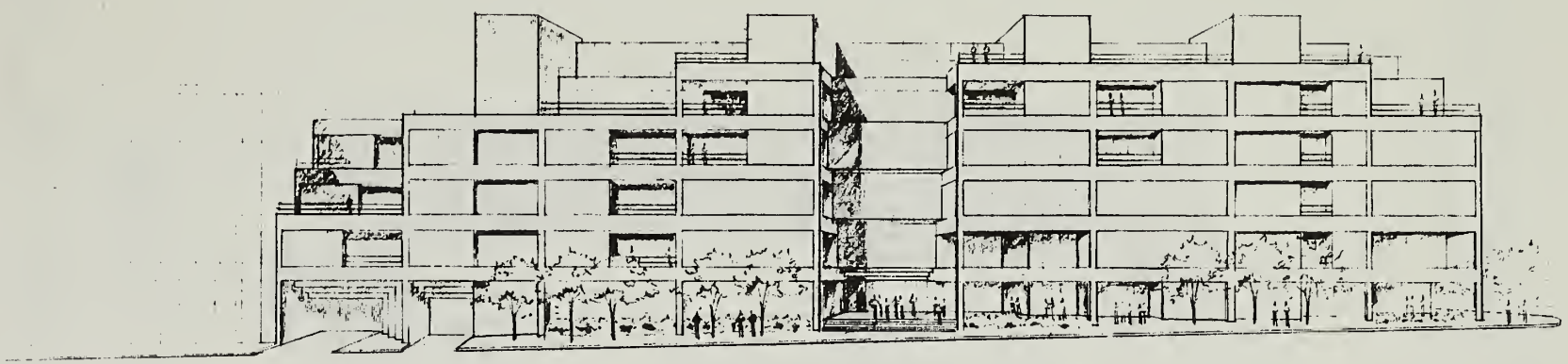
The Second and Harrison Project is examined in this Initial Study to identify its potential effects on the environment. The proposed project may generate environmental impacts that could be considered significant and these will be analzyed in an Environmental Impact Report. Potential environmental effects from the project include effects on land use; surrounding views from adjacent or nearby buildings; population, employment and housing; transportation, circulation and parking; noise; localized impacts in wind patterns; cumulative effects on fire protection services and energy; geology; water use; and archaeological resources.



2nd Street/Harrison Street

SITE LOCATION MAP

Figure·1

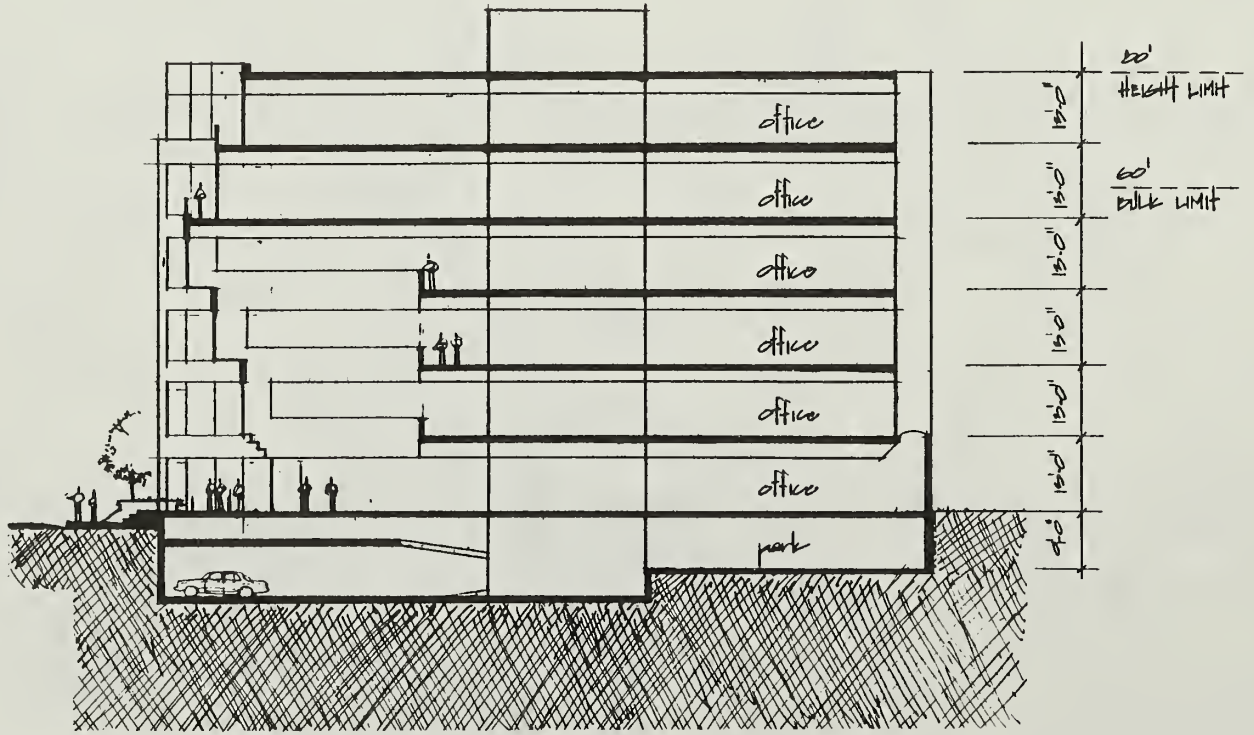


NOT TO SCALE

2nd Street/Harrison Street

BUILDING PERSPECTIVE FROM HARRISON STREET

Figure·2



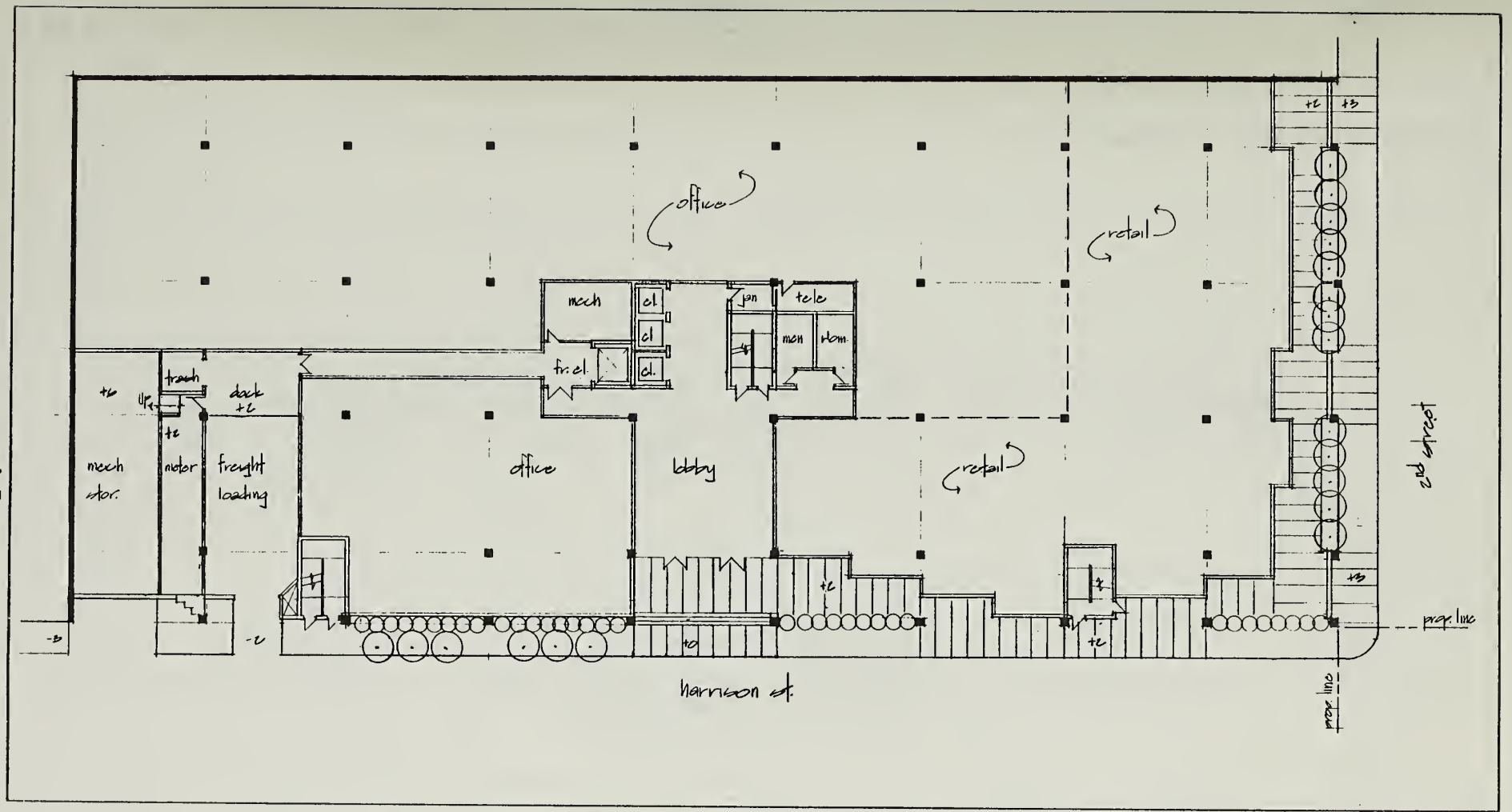
NOT TO SCALE

2nd Street/Harrison Street

SECTION FROM 2nd STREET

Figure-3

A-6 (4)



A-7 (5)

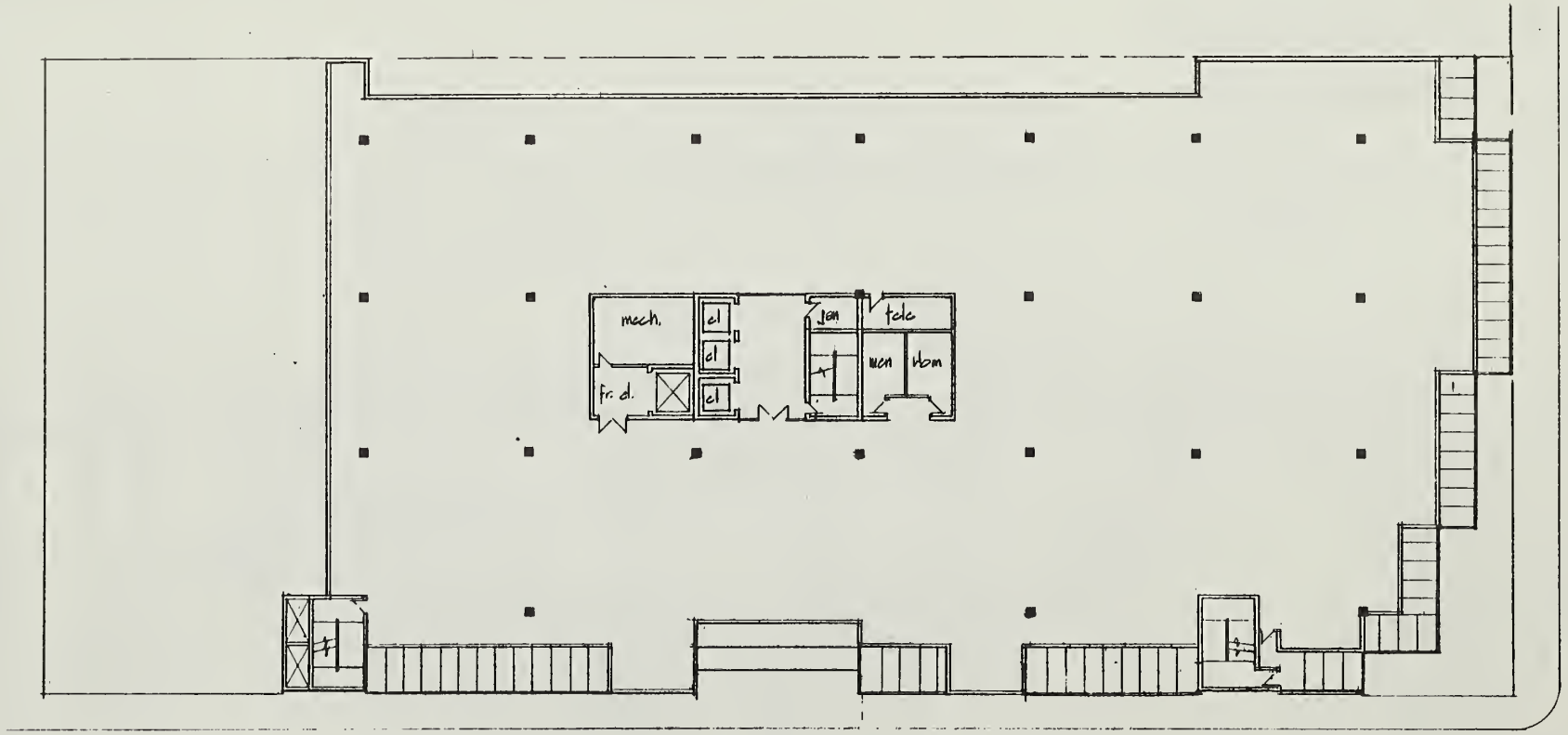
SCALE 0 10 20 40 FEET

N

2nd Street/Harrison Street

BUILDING FLOOR PLANS: FIRST FLOOR

Figure-4



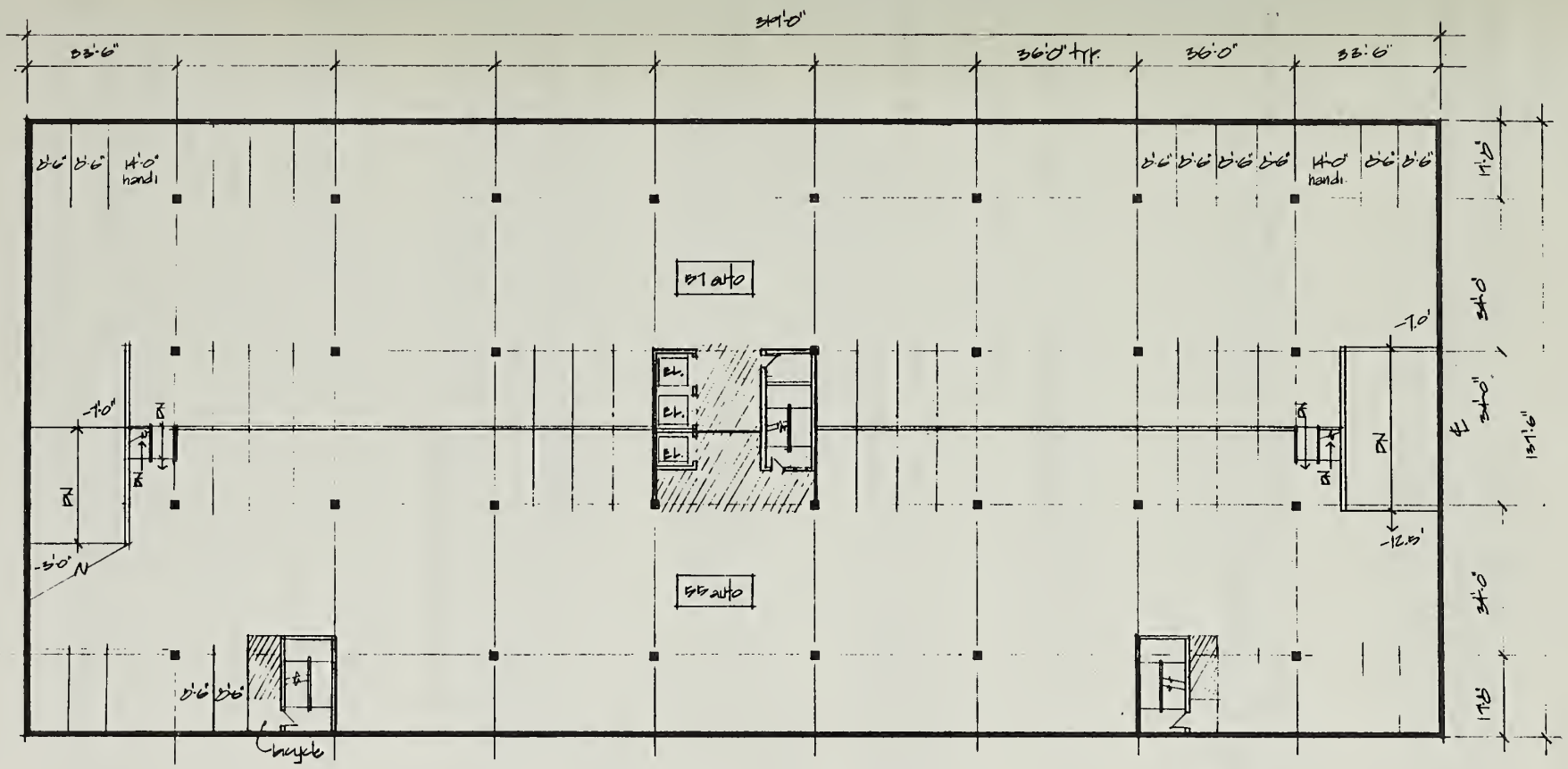
SCALE 0 10 20 40 FEET

N

2nd Street/Harrison Street

BUILDING FLOOR PLANS: SIXTH FLOOR

Figure • 5



SCALE 0 10 20 40 FEET

N

2nd Street/Harrison Street

BUILDING FLOOR PLANS: PARKING LEVEL

Figure· 6

A-9

(7)

B. INSIGNIFICANT EFFECTS

The proposed Second and Harrison Project would not have significant environmental effects on the areas indicated below. These potential environmental issues require no further study and will not be addressed in the subsequent EIR.

1. Relocation

The project site is currently used as a public self-serve surface parking lot and would not require relocation of housing or businesses or a displacement of people in order to clear the site.

2. Road Construction

The project would not create a need for additional public roads.

3. Noise

Construction noise impacts will be discussed in the EIR, however, existing noise levels would not increase upon project completion and will not be addressed in the EIR.

4. Odors/Burning of Materials

Construction and operation of the proposed project would not create objectionable odors nor would the project involve burning any materials.

5. Utilities and Public Services

The increased demand for public services and utilities generated by the proposed project would not require additional personnel or equipment and requires no further study. The cumulative impacts of the proposed project, however, could have significant impacts on fire protection services and will be discussed in the EIR.

6. Biology

The proposed project would have no effect on plant or animal life on the project site or surrounding area.

7. Water

The site is currently covered by an asphalt parking lot with no surface water. Alterations to drainage patterns, therefore, will not be discussed in the EIR.

8. Hazards

The proposed project would not be affected by hazardous uses or health hazards in the area nor would there be a potential for health hazards. An evacuation and emergency response plan would be developed by the project sponsor as part of the project.

9. Cultural

The proposed project would not impact a historic site, structure or building or affect any unique ethnic or cultural values. No significant archaeological resources are known to exist on-site, however, the project sponsor has included a mitigation measure to resolve potential impacts.

III. ENVIRONMENTAL EVALUATION CHECKLIST

A. GENERAL CONSIDERATIONS

	Yes	Maybe	No	N/A	Disc.
1. Would the project conflict with objectives and policies in the Comprehensive Plan (Master Plan) of the City?	___	X	___	___	X
2. Would the project require a variance, or other special authorization under the City Planning Code?	X	___	___	___	X
3. Would the project require approval of permits from City Departments other than DCP or BBI, or from Regional, State or Federal Agencies?	___	___	X	___	X
4. Would the project conflict with adopted environmental plans and goals?	___	___	X	___	X

The project would generally respond to the City's Comprehensive Plan and this issue will be discussed in the EIR.

The project would require a variance for a reduction in the number of off-street parking spaces required. The Planning Code requires 476 parking spaces for the project as proposed,[1] whereas, the project would seek to provide 114 below-grade parking spaces.

---

[1] City and County of San Francisco, Planning Code, Section 150 and 151, 1979 edition.

The proposed project would not require approval of City, Regional, State or Federal permits other than those issues by the Department of City Planning and the Bureau of Building Inspection.

Except for the parking variance, the development would conform with the provisions and intent of the Planning Code. The proposed development would not conflict with adopted environmental plans and goals.

B. ENVIRONMENTAL IMPACTS

	Yes	Maybe	No	N/A	Disc.
1. Land Use. Would the proposed projects:					
a. Be different from surrounding land uses?	___	X	___	___	X
b. Disrupt or divide the physical arrangement of an established community?	___	___	X	___	X

These issues will be addressed in the EIR.

2. Visual Quality and Urban Design. Would the proposed project:					
a. Obstruct or degrade any scenic view or vista open to the public?	___	X	___	___	X
b. Reduce or obstruct views from adjacent or nearby buildings?	X	___	___	___	X
c. Create a negative aesthetic effect?	___	X	___	___	X
d. Generate light or glare affecting other properties?	___	X	___	___	X

These matters will be discussed in the EIR.

3. Population/Employment/Housing. Would the proposed project:					
a. Alter the density of the area population?	X	___	___	___	X
b. Have a growth-inducing effect?	___	X	___	___	X

	Yes	Maybe	No	N/A	Disc.
c. Require relocation of housing or businesses, with a displacement of people, in order to clear the site?			X		
d. Create or eliminate jobs during construction and operation and maintenance of the project?	X				X
e. Create an additional demand for housing in San Francisco?	X				X

The issues relating to housing, alteration of population density, employment impacts and growth inducement will be analyzed in the EIR.

4. Transportation/Circulation. Would the construction or operation of the project result in:

a. Change in use of existing transportation systems (transit, roadways, pedestrian ways, etc.)?	X				X
b. An increase in traffic which is substantial in relation to existing loads and street capacity?		X			X
c. Effects on existing parking facilities, or demand for new parking?	X				X
d. Alteration in current patterns of circulation or movement of people and/or goods?		X			X
e. Increase in traffic hazards to motor vehicles, bicyclists or pedestrians?		X			X
f. A need for maintenance or improvement or change in configuration of existing public roads or facilities?		X			X
g. Construction of new public roads?			X		X

The project would not create a need for additional public roads.

Project and cumulative impacts on traffic circulation, transit use and operation, parking and pedestrian hazards will be addressed in the EIR.

5. Noise	Yes	Maybe	No	N/A	Disc.
a. Would the proposed project result in generation of noise levels in excess of those currently existing in the area?	___	___	X	___	X
b. Would existing noise levels impact the proposed use?	___	___	X	___	X
c. Are Title 25 Noise Insulation Standards applicable?	___	___	X	___	X

Noise levels in the area would not increase after project occupancy as vehicular trips to the site would be less than the amount that presently occurs due to the parking lot. Noise impacts would, however, occur during the construction period and will be further analyzed in the EIR.

Noise levels along Second, Folsom and Harrison Streets are generally traffic related on those streets.[1] Project-related traffic would constitute an increase of less than 1 dbA[2] over existing noise levels, an imperceptible amount to the human ear.

Title 25 Noise Insulation Standards are applicable to residential construction. These would not apply to the project since no on-site housing is proposed.

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[1]San Francisco Department of City Planning, Final Environmental Impact Report, Second and Folsom Project, certified April 22, 1982.

[2]Decibel corrected for the variation in frequency response to the typical human ear at commonly encountered noise levels.

6. Air Quality/Climate. Would the proposed project result in:	Yes	Maybe	No	N/A	Disc.
a. Violation of any ambient quality standard or contribution to an existing air quality violation?	___	X	___	___	X
b. Exposure of sensitive receptors to air pollutants?	___	___	X	___	X
c. Creation of objectionable odors?	___	___	X	___	X
d. Burning of any materials including brush, trees, or construction materials?	___	___	X	___	X
e. Alteration of wind, moisture, or temperature (including sun shading effects), or any change in climate, either locally or regionally?	X	___	___	___	X

Construction and operation of the proposed project would not create objectionable odors nor would they involve burning of any materials. Construction activities would generate dust emissions from the action of wind over exposed earth surfaces and these impacts will be addressed in the EIR.

Traffic-related air quality impacts and localized impacts on wind and sun shading will be evaluated in the EIR.

7. Utilities and Public Services. Would the proposed project:	Yes	Maybe	No	N/A	Disc.
a. Have an effect upon, or result in a need for, new or altered governmental services in any of the following?					
fire protection		X			X
police protection			X		X
schools			X		X
parks or other recreational facilities			X	X	
maintenance of public facilities			X		
power or natural gas			X		X
communications systems			X		X
water			X		X
sewer/storm water drainage			X		X
solid waste collection and disposal			X		X

The proposed development would increase the area of the site covered by building and increase the number of persons using the project area. Fire hazard may increase. The project would incorporate more extensive fire protection measures than most existing buildings in the area to comply with the more stringent code standards now in effect. Implementation of this project would not require additional staff or equipment and water pressure in the project area would be adequate for fire suppression; however, cumulative growth within the area could increase the demand for fire protection services[1] and will be further discussed in the EIR.

The proposed Second and Harrison development would increase population and property on the site, which could increase the opportunity for crime. Appropriate mitigation measures (alarms, adequate lighting in entry ways, closed-circuit camera systems, security personnel, etc.) would be incorporated into the project. The project would not create a need for additional personnel or equipment.[2]

The project does not contain any housing, therefore, it would not generate a demand on school services. The San Francisco Unified School District would be able to absorb any additional students as a result of projected cumulative growth within the area.[3]

It is not anticipated that the project would generate excessive demand on parks or other recreational facilities in the City or have any direct effect on the maintenance of public facilities.[4]

There would be a net increase in the consumption of energy generated by the proposed development. PG&E does not anticipate difficulty in providing the required amount of natural gas for electricity for the project.[5] Energy consumption impacts will be further discussed in the EIR. The project sponsor has indicated that the project would conform to state commission standards for nonresidential buildings (Title 24 of California Administrative Code).

There would be increased demand for communication systems generated by the proposed development. The existing facilities located in the intersection of Second and Harrison Streets would be sufficient for Pacific Telephone to provide service to the proposed project.[6]

The development would result in water consumption at the site of approximately 28,000 gallons per day (gpd). There is an eight-inch water main in Second Street. This is of adequate size to serve the demands of the proposed project, and the San Francisco Water Department does not anticipate any problems in the supply of water.[7]

The amount of wastewater generated by the project would be about the same as the water consumed. There is a 12-inch main in Harrison and a 15-inch sewer main in Second Street which would be adequate to handle increased surface flows as well as storm drainage. It is not anticipated that the City would have any difficulties providing services to the site.[8]

The proposed office building would generate about 2,200 pounds of solid waste each workday. The Golden Gate Disposal Company would remove solid waste and does not anticipate problems in meeting the demand generated by the proposed development. However, Golden Gate Disposal recommends that space be reserved for a garbage compactor.[9] The project sponsor would locate a trash compactor in the freight and loading area on the ground floor and encourage the recycling of materials such as glass, metal, paper products and newspaper.

[1]Edward J. Phipps, Assistant Chief, Support Services, San Francisco Fire Department, letter of June 28, 1982.

[2]Sergeant Paul Libert, Planning and Research, San Francisco Police Department, letter of June 24, 1982.

[3]Robert Walker, Manager, Student Assignments Office, San Francisco Unified School District, telephone communication, March 3, 1982.

[4]Jim Rogers, Assistant Superintendent of Parks, Recreation and Parks Department, telephone communication, May 12, 1982.

[5]Goerge G. Pavana, Industrial Power Engineer, Pacific Gas and Electric Company, letter of July 21, 1982.

[6]G.F. Parish, Manager, Engineering Department, Pacific Telephone, letter of June 28, 1982.

[7]George Nakagaki, Manager, San Francisco Water Department, City Distribution Division, letter of June 21, 1982.

[8]Mervin Francies, Engineering Associate II, Engineering Division, Clean Water Program, San Francisco Department of Public Works, telephone conversation, June 25, 1982.

[9]Fiore Garbarino, Service Manager, Golden Gate Disposal, telephone conversation, June 25, 1982.

	Yes	Maybe	No	N/A	Disc.
8. Biology					
a. Would there be a reduction in plant and/or animal habitat or interference with the movement of migratory fish or wildlife species?	___	____	X	___	X
b. Would the project affect the existence or habitat of any rare, endangered or unique species located on or near the site?	___	____	X	___	X
c. Would the project require removal of mature scenic trees?	___	____	X	___	X

The proposed development site is currently covered by an asphalt parking lot. There are no plant or animal habitats on the site. This matter does not require further discussion in the EIR.

9. Land (topography, soils, geology). Would proposed project result in or be subject to:	Yes	Maybe	No	N/A	Disc.
a. Potentially hazardous geologic or soils conditions on or immediately adjoining the site (slides, subsidence, erosion, and liquefaction)?	X	____	_	___	X
b. Grading? (Consider height, steepness and visibility of proposed slopes, effect of grading on trees and ridge tops.)	X	____	_	___	X
c. Generation of substantial spoils during site preparation, grading, dredging or fill?	X	____	_	___	X

These matters require discussion in the EIR.

10. Water. Would the proposed project result in:					
a. Reduction in the quality of surface water?	___	____	X	___	X
b. Change in runoff or alteration in drainage patterns?	___	____	X	___	X
c. Change in water use?	X	____	_	___	X
d. Change in quality of public water supply or in quality or quantity (dewatering) of ground-water?	___	____	X	___	X

There is no surface water at the site. The site is currently impervious, covered by an asphalt parking lot. The proposed project would not alter this situation. Runoff would continue to drain into the combined City storm/sewer system. As indicated in this discussion under Utilities and Public Services, page 14 of this document, existing sewer mains would be adequate to handle increased surface flows as well as storm drainage. These matters require no further study in the EIR.

There would be an increase in water use on-site and this impact will be discussed in the EIR.

11. Energy/Natural Resources. Would the proposed project result in:	Yes	Maybe	No	N/A	Disc.
a. Any change in consumption of energy?	X				X
b. Substantial increase in demand for existing energy sources?		X			X
c. An effect on the potential use, extraction, conservation or depletion of a natural resource?		X			X

These issues will be discussed in the EIR.

12. Hazards. Would the proposed project result in:					
a. Increased risk of explosion or release of hazardous substances (e.g., oil, pesticides, chemicals or radiation), in the event of an accident, or cause other dangers to public health and safety?			X		X
b. Creation of or exposure to a potential health hazard?			X		X
c. Possible interference with an emergency response plan or emergency evacuation plan?			X		X

It is not anticipated that the proposed project would result in any increased risk of explosion, release of hazardous substances or exposure to a potential health hazard.

An evacuation and emergency response plan would be developed as part of the proposed project (see C. MITIGATION MEASURES, page 18). The project's emergency plan would be coordinated with the City's emergency planning activities.

13. Cultural. Would the proposed project:	Yes	Maybe	No	N/A	Disc.
a. Include or affect a historic site, structure, or building?			X		X
b. Include or affect a known archaeological resource or an area of archaeological resource potential?		X			X
c. Cause a physical change affecting unique ethnic or cultural values?			X		X

The project site is currently a parking lot with no existing structures. The project area is characterized by such uses as warehousing, light industrial, manufacturing, office and residential and is not representative of any particular ethnic or cultural area.

The project site has not been surveyed in the past,[1] therefore, the potential is unknown for encountering significant archaeological and historic resources during site preparation and this issue will be addressed in the EIR. The project sponsor has included a mitigation measure as part of the project which would address this possible impact (see C. MITIGATION MEASURES, 2, page 19).

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[1] Arlyn Golder, California Archaeological Site Survey, Cabrillo College, letter of May 18, 1981.

C. MITIGATION MEASURES	Yes	No	Disc.
a. Are mitigation measures included in the project?	X		X
b. Are other mitigation measures available?	Possible if need is identified.		

MITIGATION MEASURES INCLUDED AS PART OF THE PROJECT:

1. An evacuation and emergency response plan would be developed by the project sponsor or building management staff, in consultation with the Mayor's Office of Emergency Services, to ensure coordination between the City's emergency planning

activities and the project's plan and to provide for building occupants in the event of an emergency. The project's plan would be reviewed by the Office of Emergency Services and implemented by building management insofar as feasible before issuance by the Department of Public Works of final building permits.

2. If historical or archaeological resources are discovered during construction of the proposed project, the contractor would stop work in the area of the find and select a professional archaeologist or certified expert to permit professional evaluation of the find and determine the appropriate steps to be taken. The Office of Environmental Review, the President of the Landmarks Preservation Advisory Board, the Director of the Maritime Museum in San Francisco, and the California Archeological Site Survey Office at Sonoma State University, Rohnert Park, would be notified. Any artifacts found would become the property of the project sponsor. All recommendations would be sent to the State Office of Historic Preservation. Construction would be suspended for a maximum of four weeks to permit inspection, recommendations and retrieval, if judged appropriate.

Additional mitigation measures for the project will be discussed in the EIR if need is identified.

	Yes	No	Disc.
D. ALTERNATIVES			
a. Were alternatives considered?	X	___	X

Several alternatives to the proposed project were under consideration.

- No Project Alternative would address leaving the project site in its present state. This would allow another sponsor to develop the site at some future time. Also discussed under this alternative would be the effect of locating the proposed project in another Bay Area location.

- Alternative Design would address a project containing a south-facing public plaza area. This would increase the bulk and height of the structure and could require Conditional Use authorization and a Variance.

- Code Compliance Alternative would address a project which would require no variance for parking and would comply with all provisions of the Planning Code.

The above alternatives will be analyzed in the EIR.

III. MANDATORY FINDINGS OF SIGNIFICANCE:

		Yes	No	Disc.
1.	Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal, or eliminate important examples of the major periods of California history or prehistory?	___	X	___
2.	Does the project have the potential to achieve short-term, to the disadvantage of long-term, environmental goals?	___	X	X
3.	Does the project have possible environmental effects which are individually limited, but cumulatively considerable? (Analyze in the light of past projects, other current projects, and probable future projects?)	X	___	X
4.	Would the project cause substantial adverse effects on human beings, either directly or indirectly?	___	X	___
5.	Is there a serious public controversy concerning the possible environmental effect of the project?	___	X	___

The effects of cumulative impacts and the short-term versus long-term environmental impacts for the project will be discussed in the EIR.

On the basis of this initial evaluation:

____ I find the proposed COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared by the Department of City Planning.

____ I find that although the proposed project could have a significant effect on the environment, there WILL NOT be a sigificant effect in this case because the mitigation measures, in the discussion have been included as part of the proposed project. A NEGATIVE DECLARATION will be prepared.

__X__ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

Robert W. Passmore
Assistant Director-Planning

for

Dean Macris
Director

Date: 9/8/82

APPENDIX B

TRANSPORTATION

TABLE B-1

PEDESTRIAN FLOW REGIMES

Flow Regime	Walking Speed Choice	Conflicts	Average Speed Rate (P/F/M)[1]
Open	Free Selection	None	0.5
Unimpeded	Some Selection	Minor	0.5 - 2.0
Impeded	Some Selection	High Indirect Interaction	2.0 - 6.0
Constrained	Some Restriction	Multiple	6.0 - 10.0
Crowded	Restricted	High Probability	10.0 - 14.0
Congested	All Reduced	Frequent	14.0 - 16.0
Jammed	Shuffle Only	Unavoidable	16.0+

[1] P/F/M - Pedestrians per foot of sidewalk width per minute.

Source: Boris Pushkarev and Jeffrey M. Zupan, Urban Space for Pedestrians, Massachusetts, MIT Press, 1975.

TABLE B-2

LEVELS OF SERVICE DEFINITIONS FOR SIGNALIZED INTERSECTIONS[1]

Level of Service A

Level of Service A describes a condition where the approach to an intersection appears quite open and turning movements are made easily. Little or no delay is experienced. No vehicles wait longer than one red traffic signal indication. The traffic operation can generally be described as excellent.

Level of Service B

Level of Service B describes a condition where the approach to an intersection is occasionally fully utilized and some delays may be encountered. Many drivers begin to feel somewhat restricted within groups of vehicles. The traffic operation can generally be described as very good.

Level of Service C

Level of Service C describes a condition where the approach to an intersection is often fully utilized and back-ups may occur behind turning vehicles. Most drivers feel somewhat restricted, but not objectionably so. The driver occasionally must have to wait more than one red traffic signal indication. The traffic operation can generally be described as good.

Level of Service D

Level of Service D describes a condition of increasing restriction causing substantial delays and queues of vehicles on approaches to the intersection during short times within the peak period. However, there are enough signal cycles with lower demand such that queues are periodically cleared, thus preventing excessive back-ups. The traffic operation can generally be described as fair.

Level of Service E

Capacity occurs at Level of Service E. It represents the most vehicles that any particular intersection can accommodate. At capacity there may be long queues of vehicles waiting upstream of the intersection and vehicles may be delayed up to several signal cycles. The traffic operation can generally be described as poor.

Level of Service F

Level of Service F represents a jammed condition. Back-ups from locations downstream or on the cross street may restrict or prevent movement of vehicles out of the approach under consideration. Hence, volumes of vehicles passing through the intersection vary from signal cycle to signal cycle. Because of the jammed condition, this volume would be less than capacity.

[1] City and County of San Francisco, Department of Public Works, Traffic Engineering Division.

TABLE B-3

Muni Patronage Summary
PM Estimated Peak Hour-Outbound Direction

(Muni Lines Within 2,000 Feet of Project Site)

	Patronage			Load Factors[3]		
		Projected			Projected	
Line	Existing[1]	Without Project[2]	With Project	Existing	Without Project	With Project
1	1,455	1,965	1,971	0.93	1.26	1.26
2	475	640	642	1.09	1.47	1.47
3	520	700	702	1.08	1.46	1.46
5	980	1,325	1,329	0.93	1.26	1.26
6	545	735	737	0.83	1.12	1.12
7	405	545	547	0.77	1.04	1.04
8	655	885	888	0.74	1.00	1.00
9	470	635	637	0.88	1.19	1.19
11	185	250	250	0.63	0.85	0.85
12	450	605	607	0.85	1.15	1.15
14	1,040	1,405	1,409	0.92	1.24	1.24
14GL	205	275	276	0.71	0.96	0.96
14X	345	465	466	0.68	0.92	0.92
15	630	850	853	0.87	1.17	1.17
17X	160	215	215	0.64	0.86	0.86
21	645	870	873	0.85	1.15	1.15
27	145	195	195	0.57	0.77	0.77
30	1,005	1,355	1,359	0.88	1.19	1.19
30X	530	715	717	1.04	1.40	1.40
31	655	885	888	1.07	1.44	1.44
32	475	640	642	0.79	1.07	1.07
38/38L	1,965	2,650	2,658	1.01	1.36	1.36
41 (TC and MC)	305	410	411	0.42	0.57	0.57
42	360	485	486	0.71	0.96	0.96
66	555	750	752	0.77	1.04	1.04
71	445	600	602	1.09	1.47	1.47
80X	415	560	560	0.82	1.11	1.11
81X	325	440	440	0.80	1.08	1.08
J,K,L,M and N	6,635	8,955	8,983	0.93	1.26	1.26

[1] Capacity, patronage (without project) and load factors (without project) obtained from Guidelines for Environmental Evaluation Transportation Impact, Department of City Planning, San Francisco, 3 July 1980 (revised October 1980). (Also includes projects approved from November 1980 through October 1981).

[2] Patronage and load factors (with project) reflect a line by line proportional distribution of the proposed project's estimated Muni patronage.

[3] The listed load factors are an average of all the loads during the peak hour. Certain runs in that peak hour could experience even greater congestion. Load factor is a measure of vehicle capacity. For most Muni vehicles a load factor of 1.00 represents a designed capacity of 150% of the number of seats. For LRV's a load factor of 1.00 represents a designed capacity of 220% of the seated capacity.

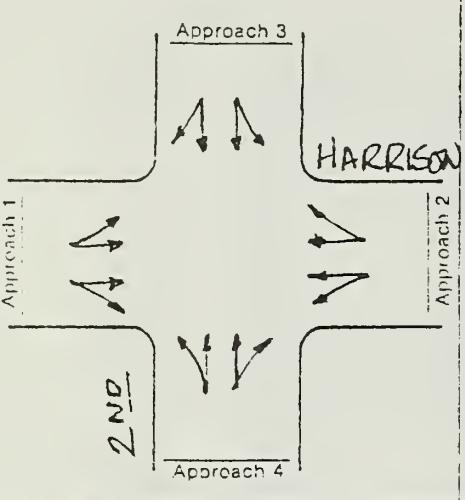
INTERSECTION CAPACITY ANALYSIS

4:30-5:30

Intersection 2ND / HARRISON Design Hour P.M. PEAK

Other Conditions EXISTING TRAFFIC (COUNTED 5/8/81)

1. Identify Lane Geometry



4. Left Turn Check

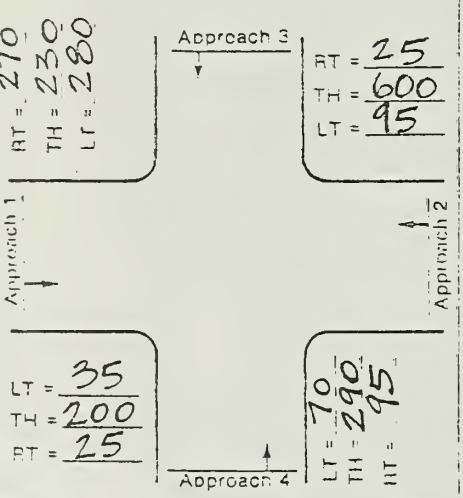
	Approach 1	2	3	4
a. Number of change intervals per hour				
b. Left turn capacity on change interval, in vph				
c. G/C Ratio				
d. Opposing volume in vph				
e. Left turn capacity on green, in vph				
f. Left turn capacity in vph (b + e)				
g. Left turn volume in vph				
h. Is volume > capacity (g > f)?				

6b. Volume Adjustment for Multiphase Signal Overlap

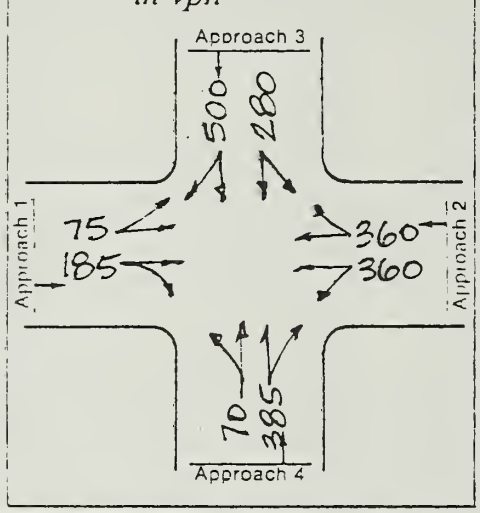
Probable Phase	Possible Critical Volume in vph	Volume Carryover to next phase	Adjusted Critical Volume in vph

2φ

2. Identify Volumes, in vph



5. Assign Lane Volumes, in vph



7. Sum of Critical Volumes

385 + 280 + 360 + 35

= 1060 vph

8. Intersection Level of Service

B/C

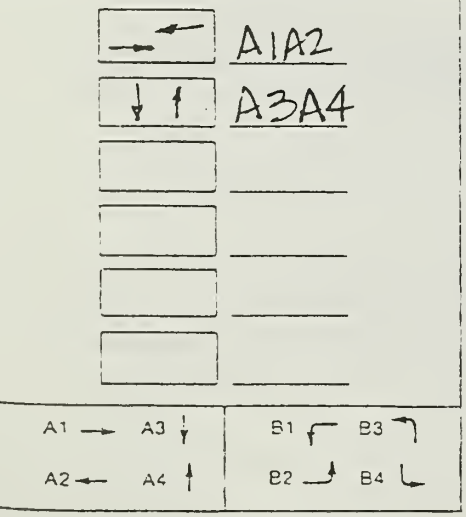
9. Recalculate

Geometric Change _____

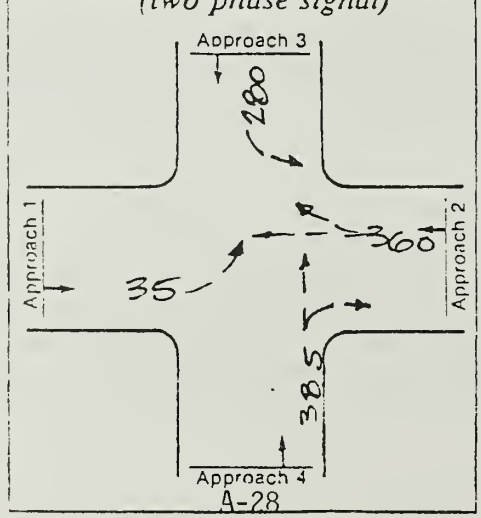
Signal Change _____

Volume Change _____

3. Identify Phasing



6a. Critical Volumes, in vph (two phase signal)



Service Level Ranges

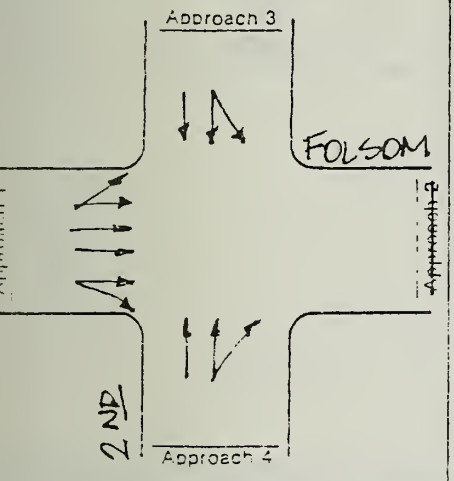
Level	Sum of Critical Volumes 2 Phase	3 Phase	4+ Phases
A	900	855	825
B	1050	1000	965
C	1200	1140	1100
D	1350	1275	1225
E	1500	1425	1375
F	not applicable		

INTERSECTION CAPACITY ANALYSIS

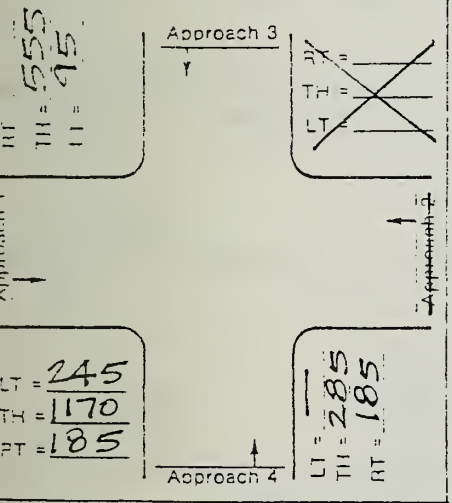
Intersection 2ND / FOLSOM Design Hour P.M. PEAK

Other Conditions EXISTING TRAFFIC (COUNTED 5/8/81)

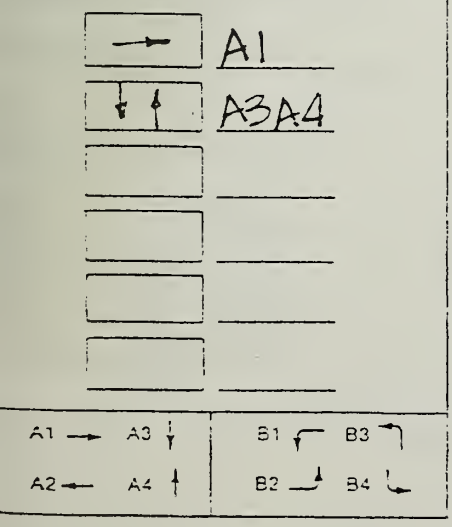
1. Identify Lane Geometry



2. Identify Volumes, in vph



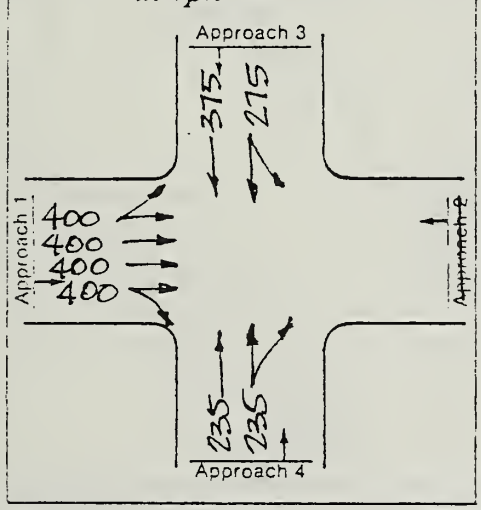
3. Identify Phasing



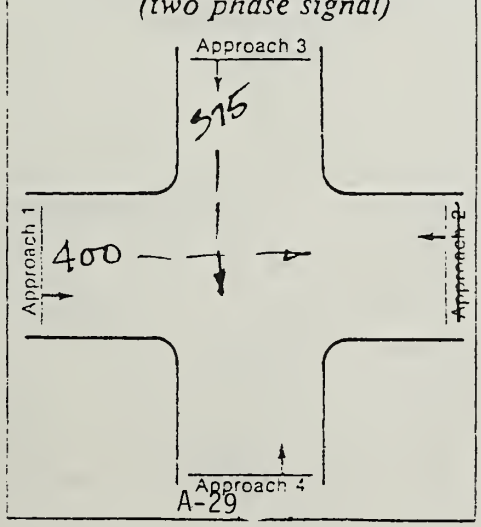
4. Left Turn Check

	Approach 1	2	3	4
a. Number of change intervals per hour				
b. Left turn capacity on change interval, in vph				
c. G/C Ratio				
d. Opposing volume in vph				
e. Left turn capacity on green, in vph				
f. Left turn capacity in vph (b + e)				
g. Left turn volume in vph				
h. Is volume > capacity (g > f)?				

5. Assign Lane Volumes, in vph



6a. Critical Volumes, in vph (two phase signal)



6b. Volume Adjustment for Multiphase Signal Overlap

Probable Phase	Possible Critical Volume in vph	Volume Carryover to next phase	Adjusted Critical Volume in vph

2 ϕ

7. Sum of Critical Volumes

400 + 375 + — + —

= 775 vph

8. Intersection Level of Service

A

9. Recalculate

Geometric Change _____

Signal Change _____

Volume Change _____

Service Level Ranges

Level	Sum of Critical Volumes 2 Phase	3 Phase	4+ Phases
A	900	855	825
B	1050	1000	965
C	1200	1140	1100
D	1350	1275	1225
E	1500	1425	1375
F	not applicable		

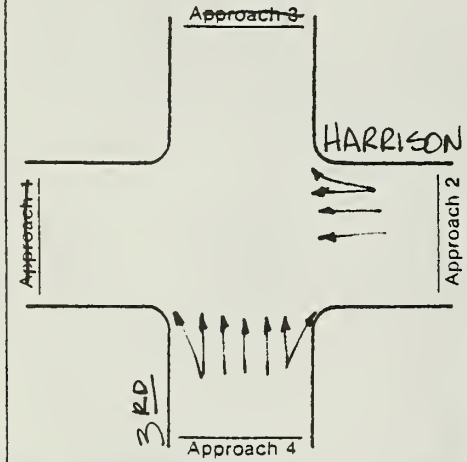
INTERSECTION CAPACITY ANALYSIS

4:30 - 5:30

Intersection HARRISON / 3RD Design Hour PM PEAK

Other Conditions EXISTING TRAFFIC (COUNTED 3/11/81)

1. Identify Lane Geometry



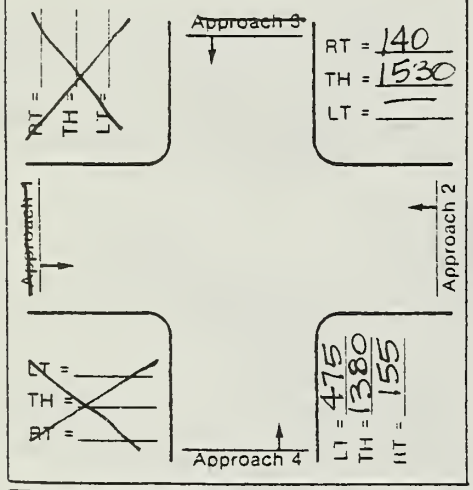
4. Left Turn Check

	Approach 1	2	3	4
a. Number of change intervals per hour				
b. Left turn capacity on change interval, in vph				
c. G/C Ratio				
d. Opposing volume in vph				
e. Left turn capacity on green, in vph				
f. Left turn capacity in vph (b + e)				
g. Left turn volume in vph				
h. Is volume > capacity (g > f)?				

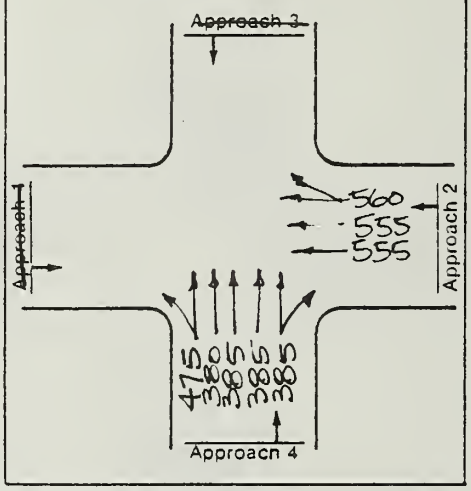
6b. Volume Adjustment for Multiphase Signal Overlap

Probable Phase	Possible Critical Volume in vph	Volume Carryover to next phase	Adjusted Critical Volume in vph

2. Identify Volumes, in vph



5. Assign Lane Volumes, in vph



7. Sum of Critical Volumes

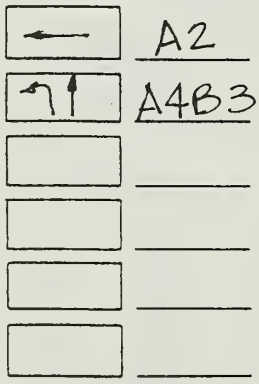
560 + 475 + — + — = 1035 vph

8. Intersection Level of Service

B-C

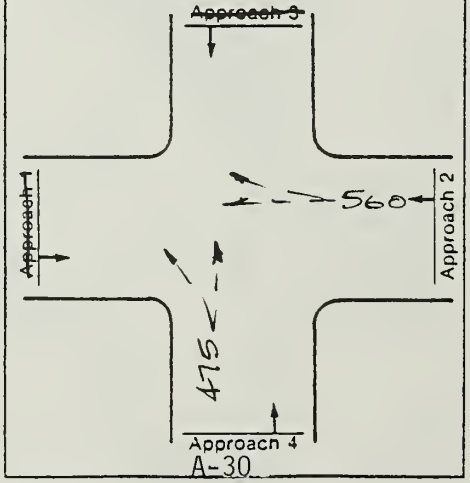
Notes:

3. Identify Phasing



A1 →	A3 ↓	B1 ↰	B3 ↰
A2 ←	A4 ↑	B2 ↲	B4 ↳

6a. Critical Volumes, in vph (two phase signal)



Service Level Ranges

Level	Sum of Critical Volumes 2 Phase	3 Phase	4+ Phases
A	900	855	825
B	1050	1000	965
C	1200	1140	1100
D	1350	1275	1225
E	1500	1425	1375
F	not applicable		

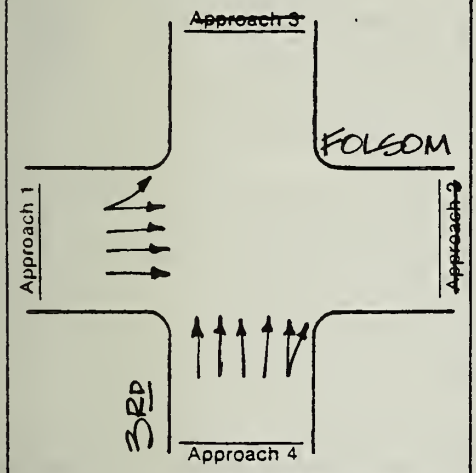
INTERSECTION CAPACITY ANALYSIS

4:30-5:30

Intersection FOLSOM / 3RD Design Hour P.M. PEAK

Other Conditions EXISTING TRAFFIC (COUNTED 2/18/81)

1. Identify Lane Geometry



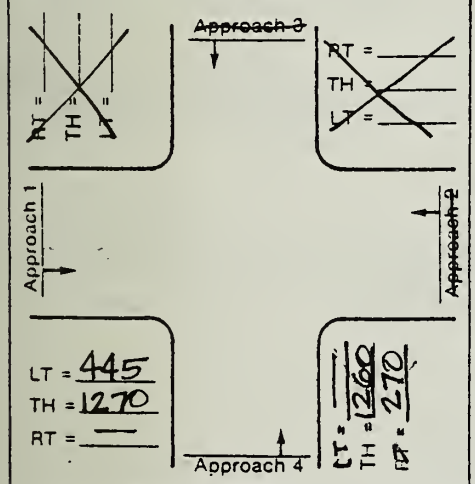
4. Left Turn Check

	Approach 1	2	3	4
a. Number of change intervals per hour				
b. Left turn capacity on change interval, in vph				
c. G/C Ratio				
d. Opposing volume in vph				
e. Left turn capacity on green, in vph				
f. Left turn capacity in vph (b + e)				
g. Left turn volume in vph				
h. Is volume > capacity (g > f)?				

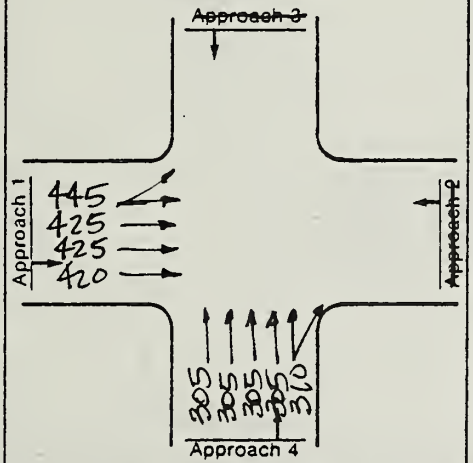
6b. Volume Adjustment for Multiphase Signal Overlap

Probable Phase	Possible Critical Volume in vph	Volume Carryover to next phase	Adjusted Critical Volume in vph

2. Identify Volumes, in vph



5. Assign Lane Volumes, in vph



7. Sum of Critical Volumes

445 + 310 + — + —

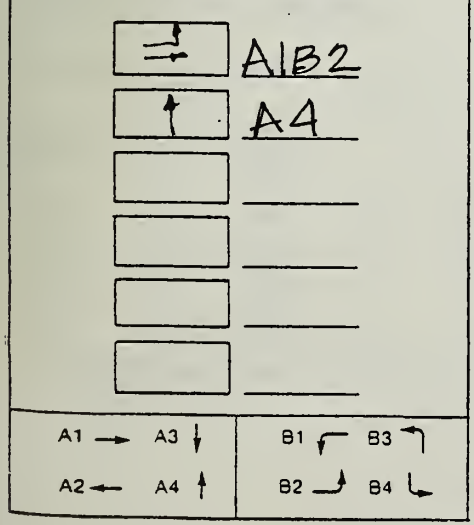
= 755 vph

8. Intersection Level of Service

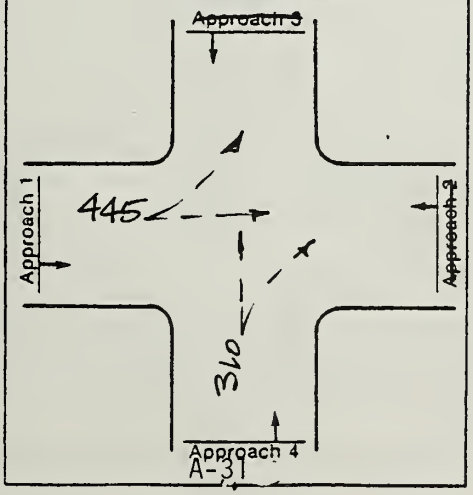
A

Notes:

3. Identify Phasing



6a. Critical Volumes, in vph (two phase signal)



Service Level Ranges

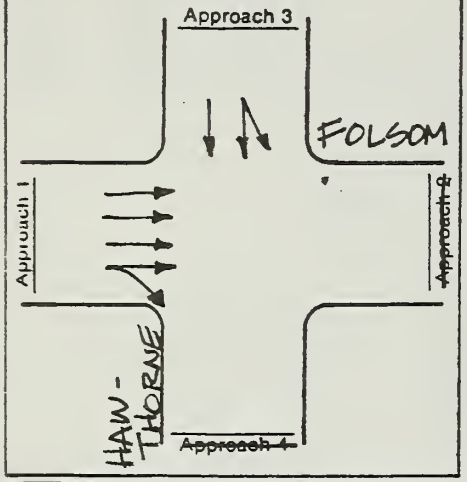
Level	Sum of Critical Volumes 2 Phase	3 Phase	4+ Phases
A	900	855	825
B	1050	1000	965
C	1200	1140	1100
D	1350	1275	1225
E	1500	1425	1375
F	not applicable		

INTERSECTION CAPACITY ANALYSIS

Intersection FOLSOM / HAWTHORNE Design Hour 7:30 - 8:30 AM PEAK

Other Conditions EXISTING TRAFFIC (COUNTED 1/15/81)

1. Identify Lane Geometry



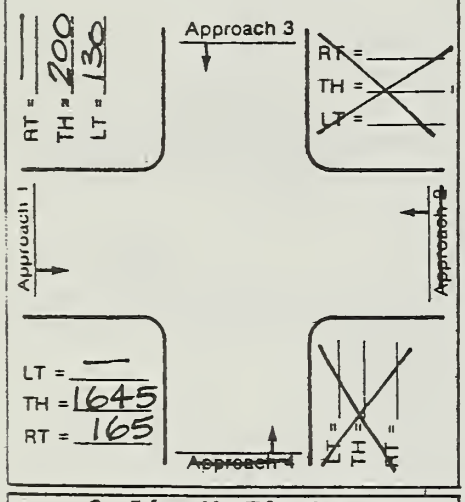
4. Left Turn Check

	Approach 1	2	3	4
a. Number of change intervals per hour				
b. Left turn capacity on change interval, in vph				
c. G/C Ratio				
d. Opposing volume in vph				
e. Left turn capacity on green, in vph				
f. Left turn capacity in vph (b + e)				
g. Left turn volume in vph				
h. Is volume > capacity (g > f)?				

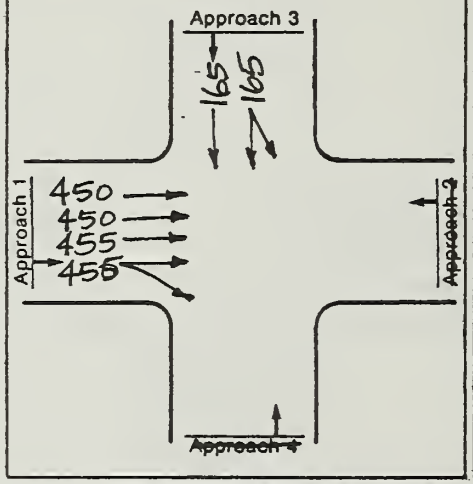
6b. Volume Adjustment for Multiphase Signal Overlap

Probable Phase	Possible Critical Volume in vph	Volume Carryover to next phase	Adjusted Critical Volume in vph

2. Identify Volumes, in vph



5. Assign Lane Volumes, in vph



7. Sum of Critical Volumes

455 + 165 + — + —

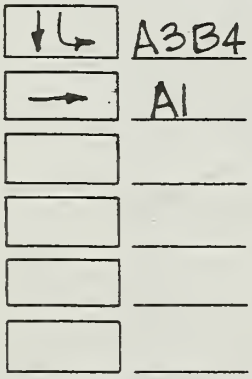
= 620 vph

8. Intersection Level of Service

A

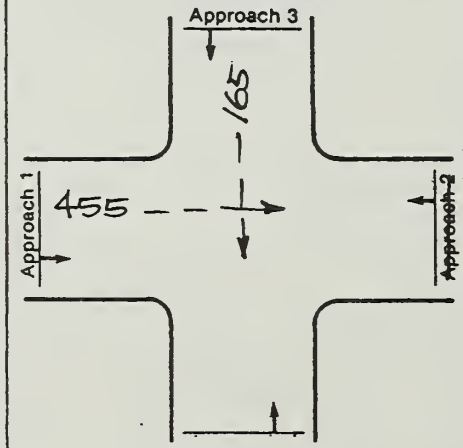
Notes:

3. Identify Phasing



A1 →	A3 ↓	B1 ↰	B3 ↱
A2 ←	A4 ↑	B2 ↱	B4 ↳

6a. Critical Volumes, in vph (two phase signal)



Service Level Ranges

Level	Sum of Critical Volumes 2 Phase	3 Phase	4+ Phases
A	900	855	825
B	1050	1000	965
C	1200	1140	1100
D	1350	1275	1225
E	1500	1425	1375
F	not applicable		

APPENDIX C

MICROCLIMATE[1]

I. INTRODUCTION

The proposed Second and Harrison Building would be located at the northeast corner of the block bounded by Second Street, Harrison Street, Hawthorne Street and Dow Place. The proposed building would be 80 feet tall, with six stories above grade and one level of subsurface parking. The main entrance would be from off Harrison Street.

The purpose of this analysis is to evaluate the potential for adverse wind or comfort impacts caused by construction of the proposed project. The findings of this report are based upon a site visit and a review of project plans. Wind tunnel tests of the proposed design have not been conducted; this analysis is, therefore, qualitative in nature.

II. EXISTING CONDITIONS

Wind direction and speed frequencies have been analyzed by the Bay Area Air Quality Management District for 1977-1978 data. The District considers San Francisco to have 3 climatic regimes: summer (May through September), winter (November through March) and a transition regime (April and October). In terms of wind-caused comfort problems, the 5-month "summer" regime is of greatest importance. The mean windspeed in the "summer" regime is 8.0 mph, in the "winter" regime it is 4.8 mph and during "transition" months it is 6.0 mph. It is during the summer that the cool temperatures, wind and clouds that San Francisco's climate is noted for are most frequent.

The prevailing wind direction in San Francisco is westerly. Southwesterly and northwesterly winds are also important. In the summer, the wind is from

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[1] Donald Ballanti, Wind Impact Evaluation for the Proposed Second and Harrison Building, San Francisco, prepared for Environmental Impact Planning Corporation, December 10, 1982.

these wind directions about 97% of the time.

The project lies within an industrial and commercial area, with many open areas used for parking. The site is bounded on the southwest by a 5-story building. To the west, a gap exists in the buildings. The terrain to the west of the site is open, and includes the Moscone Center across Third Street. To the northwest, there are two highrise buildings of 7 and 10 stories.

The site is exposed to prevailing westerly winds. This may change, however, as development of the Yerba Buena Center increases the density of upwind buildings. The site is mostly sheltered from southwest and northwest winds.

III. PROBABLE PROJECT EFFECTS

The effect of a building on the wind at ground level is primarily determined by the extent the building is exposed to prevailing winds and its design. in San Francisco, buildings that cause adverse ground-level winds generally:

- are free standing, i.e., not sheltered by buildings or terrain
- have a wide face oriented into the prevailing winds
- have a continuous, unbroken facade down to the ground level.

The proposed structure would be mostly sheltered from northwest and southeast winds, but would extend six stories into west winds. The Dow Place face of the building would cause accelerations of the wind. The orientation of the six-story project is such that these accelerations would effect only Dow Place. Little affect would be expected along Harrison Street. The pedestrian areas adjacent the site along Second Street would be sheltered by the project.

The wind accelerations along Dow Place under west wind conditions would not be extreme due to the low-rise nature of the project. The bulk of

the project does not appear to be sufficient to result in hazardous wind accelerations.

IV. MITIGATION AND RECOMMENDATIONS

The project's relative low height and orientation are such to reduce the potential for adverse wind impacts. Wind accelerations along Dow Place could be reduced further by the use of setbacks or cutouts along the Dow Place facade.

Future construction west of the site would reduce its exposure to west winds greatly and eliminate predicted wind impacts.

Because of the relatively low height of the project the advantageous orientation and the sheltered nature of the site for southwest and northwest winds, wind tunnel tests do not appear justified.

APPENDIX D

FUNDAMENTAL CONCEPTS OF ENVIRONMENTAL NOISE

This section provides background information to aid in understanding the technical aspects of this report.

Three dimensions of environmental noise are important in determining subjective response. These are:

a. the intensity or level of the sound

b. the frequency spectrum of the sound

c. the time-varying character of the sound

Airborne sound is a rapid fluctuation of air pressure above and below atmospheric pressure. Sound levels are usually measured and expressed in decibels (dB), with 0 dB corresponding roughly to the threshold of hearing.

The "frequency" of a sound refers to the number of complete pressure fluctuations per second in the sound. The unit of measurement is the cycle per second (cps) or Hertz (Hz). Most of the sounds which we hear in the environment do not consist of a single frequency, but of a broad band of frequencies, differing in level. The quantitative expression of the frequency and level content of a sound is its sound spectrum. A sound spectrum for engineering purposes is typically described in terms of octave bands which separate the audible frequency range (for human beings, from about 20 to 20,000 Hz) into ten segments.

Many rating methods have been devised to permit comparisons of sounds having quite different spectra. Fortunately, the simplest method correlates with human response practically as well as the more complex methods. This method consists of evaluating all of the frequencies of a sound in accordance with a weighting that progressively and severely deemphasizes the importance of frequency components below 1000 Hz, with mild deemphasis above 5000 Hz. This type of frequency weighting reflects the fact that human hearing is less sensitive at low frequencies and extreme high frequencies than in the frequency midrange.

The weighting curve described above is called "A" weighting, and the level so measured is called the "A-weighted sound level," or simply "A-level."

The A-level in decibels is expressed "dBA"; the appended letter "A" is a reminder of the particular kind of weighting used for the measurement. In practice, the A-level of a sound source is conveniently measured using a sound level meter that includes an electrical filter corresponding to the A-weighting curve. All U.S. and international standard sound level meters include such a filter. Typical A-levels measured in the environment and in industry are shown in Figure 1.

Although the A-level may adequately describe environmental noise at any instant in time, the fact is that the community noise level varies continuously. Most environmental noise includes a conglomeration of distant noise souces which create a relatively steady background noise in which no particular source is identifiable. These distant sources may

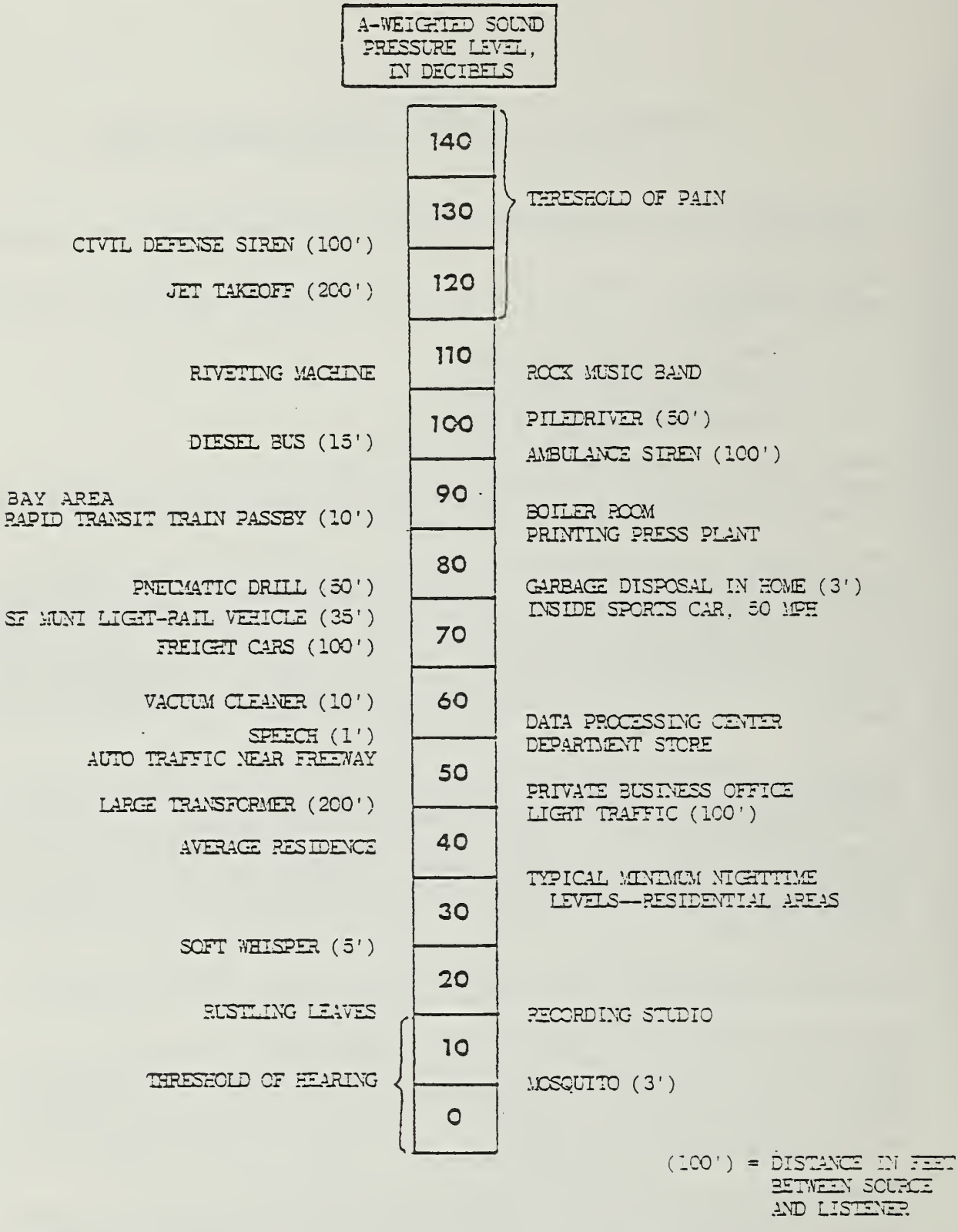

FIGURE 1: TYPICAL SOUND LEVELS MEASURED IN THE ENVIRONMENT AND INDUSTRY

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include traffic, wind in trees, industrial activities, etc. These noise sources are relatively constant from moment to moment, but vary slowly from hour to hour as natural forces change or as human activity follows its daily cycle. Superimposed on this slowly varying background is a succession of identifiable noisy events of brief duration. These may include nearby activities or single vehicle passages, aircraft flyovers, etc., which cause the environmental noise level to vary from instant to instant.

To describe the time-varying character of environmental noise, the statistical noise descriptors L10, L50, and L90 are commonly used. The L10 is the A-weighted sound level equaled or exceeded during 10 percent of a stated time period. The L10 is considered a good measure of the "average peak" noise. The L50 is the A-weighted sound level that is equaled or exceeded 50 percent of a stated time period. The L50 represents the median sound level. The L90 is the A-weighted sound level equaled or exceeded during 90 percent of a stated time period. The L90 is used to describe the background noise.

As it is often cumbersome to describe the noise environment with these statistical descriptors, a single number descriptor called the Leq is also widely used. The Leq is defined as the equivalent steady-state sound level which in a stated period of time would contain the same acoustic energy as the time-varying sound level during the same time period. The Leq is particularly useful in describing the subjective change in an environment where the source of noise remains the same but there is change in the level of activity. Widening roads and/or increasing traffic are examples of this kind of situation.

In determining the daily measure of environmental noise, it is important to account for the difference in response of people to daytime and nighttime noises. During the nighttime, exterior background noises are generally lower than the daytime levels. However, most household noise also decreases at night and exterior noises become very noticeable. Further, most people are sleeping at night and are very sensitve to noise intrusion.

To account for human sensitivity to nighttime noise levels a descriptor, Ldn, (day-night equivalent sound level) was developed. The Ldn divides the 24-hour day into the daytime of 7 a.m. to 10 p.m. and the nighttime of 10 p.m. to 7 a.m. The nighttime noise level is weighted 10 dB higher than the daytime noise level. The Ldn, then, is the A-weighted average sound level in decibels during a 24-hour period with 10 dBA added to the hourly Leqs during the nighttime. For highway noise environments the Leq during the peak traffic hour is approximately equal to the Ldn.

The effects of noise on people can be listed in three general categories:

1. subjective effects of annoyance, nuisance, dissatisfaction
2. interference with activities such as speech, sleep, learning
3. physiological effects such as startle, hearing loss

The sound levels associated with environmental noise, in almost every case, produce effects only in the first two categories. Unfortunately, there is as yet no completely satisfactory measure of the subject effects of noise, or of the corresponding reactions of annoyance and dissatisfaction. This is primarily because of the wide variation in individual thresholds of annoyance, and habituation to noise over differing individual past experiences with noise.

Thus, an important parameter in determining a person's subjective reaction to a new noise is the existing noise environment to which one has adapted: the so-called "ambient" noise. "Ambient" is defined as "the all-encompassing noise associated with a given environment, being a composite of sounds from many sources, near and far." In general, the more a new noise exceeds the previously existing ambient, the less acceptable the new noise will be judged by the hearers.

With regard to increases in noise level, knowledge of the following relationships will be helpful in understanding the quantitative sections of this report:

1. Except in carefully controlled laboratory experiments, a change of only 1 dBA cannot be perceived.

2. Outside of the laboratory, a 3-dBA change is considered a just-noticeable difference.

3. A change in level of at least 5 dBA is required before any noticeable change in community response would be expected.

4. A 10-dBA change is subjectively heard as approximately a doubling in loudness, and would almost certainly cause an adverse change in community response.

Source: Charles M. Salter Associate, Inc., November, 1982

APPENDIX E

CUMULATIVE TRANSPORTATION IMPACT ANALYSIS METHODOLOGY

1. Travel Demand

Travel demand from the 17.3 million gross square feet of net new cumulative office development and 589,210 gross square feet of net new cumulative retail development in downtown San Francisco has been estimated using a land-use approach for trip generation. Future travel into the downtown has been assumed to be a result of construction and occupancy of downtown office and retail space. The Office of Environmental Review of the Department of City Planning (DCP) has identified office projects in the greater downtown area as being under formal review, approved or under construction. Table F-1 in Appendix F shows the list of projects separated by review status and includes Assessor's Block number and DCP case number for each project. The information contained in this table represents the best data available from the Department of City Planning at the time of preparation of this document.

Hotel projects have not been included in the cumulative analyses because hotel uses have different peaking characteristics from office buildings and generally do not significantly affect peak-hour traffic or transit. Residential projects have not been included because residential travel in the downtown is generally in the contra-commute direction during peak-hours and because the office trip generation rate and modal split distribution are predicated on the assumption that housing would be available in the City. Thus, inclusion of residential projects would be double counting of project generated travel.

Projections of future travel have been made using trip generation rates of 17.5 person trip ends (one way trips) per 1,000 net leasable square feet or net new office space and 100 person-trips ends (pte) per 1,000 gross square feet of net new retail space.[1] Gross square feet of office space was converted to net leasable square feet by assuming an efficiency factor of 80%. The retail space has been assumed to be primarily "ground-floor retail" which would serve the office building users. Based upon survey data collected at the Embarcadero Center, approximately 45% of the travel generated by "ground-floor retail" uses has been assumed to be oriented to the office uses on-site and is already included in the office trip generation rate. Thus, 55% of the retail trip generation has been assumed to be "new" to each site.[2]

P.M. peak-hour travel from the cumulative development was assigned to modes of travel based upon the regional distribution and modal split shown in Table E-1, page A-43. During the p.m. peak hour about 20% of the office travel (15% in the South of Market area) and 10% of the retail travel was assumed to occur. Of the office travel approximately 90% (during peak hours) was assumed to be work-related and 10% was assumed to be other travel. On a daily basis, office travel was assumed to be 57% work-related and 43% other travel.[3]

To calculate vehicle trip ends, average automobile occupancies were assumed for each regional area based upon available data. Currently, commute travel to the East Bay is about 1.8 persons per vehicle; the North Bay is about 1.5 persons per vehicle; and to the Peninsula is about 1.2 persons per vehicle.[4] San Francisco auto occupancy was assumed to be 1.4 persons per vehicle.[5] Occupancy for commute travel to/from the South of Market area was assumed to be 1.2, as indicated in the South of Market area survey.

A basic assumption in all of the transportation analyses is that existing regional distributions and modal splits would continue into the future unchanged. Thus, the implicit assumption has been made that about 40% of the future employees would live in San Francisco. If housing is not available in the City then a greater impact than noted would result on the commute corridors into the City from the North Bay, East Bay and Peninsula. If housing is not available in the City, however, the impact on the Muni would be less than noted because City residents are the majority of Muni users.

2. Employment Trend Approach to Cumulative Analysis

In this and other San Francisco EIRs, a land-use type of approach has been used to estimate the transportation impacts of both the proposed project and cumulative development. An alternate type of approach is to forecast travel demand based upon regional projections of employment share (employment trend approach).[6] Briefly, the fundamental differences between (and limitations of) the two approaches are:[7]

The land-use approach (as it has been applied in this EIR) has used net new office space actually proposed, approved or under construction (less space in buildings demolished to make way for new buildings) as the basis for travel generation. The land-use approach assumes that literally all of the currently proposed development in the downtown area will be constructed and fully occupied within the time frame of the 600 Harrison Street

TABLE E-1

TRAVEL DISTRIBUTION AND MODAL SPLIT FOR CUMULATIVE ANALYSIS

Geographic Area	OFFICE Work Travel Geog. %1	Mode	%2	Other Travel Geog. %1	Mode	%2	Retail Travel Geog. %1	Mode	%2
SAN FRANCISCO									
Downtown/Northeast	7.0			33.0			84.0		
(East of Van Ness, North of Market to the Embarcadero South of Market to 101)		Auto	9.0		Auto	2.0		Auto	3.0
		Muni	61.0		Muni	20.0		Muni	7.0
		BART	1.0		BART	0.0		BART	1.0
		Walk	29.0		Walk	78.0		Walk	89.0
Northwest	15.0			11.0			1.0		
(Richmond, Marina Western Addition)		Auto	31.0		Auto	15.0		Auto	10.0
		Muni	69.0		Muni	85.0		Muni	90.0
Southwest	13.0			13.0			2.0		
(Sunset, Parkside, Ingleside, Excelsior, Twin Peaks, and Upper Market)		Auto	29.0		Auto	12.0		Auto	10.0
		Muni	62.0		Muni	59.0		Muni	80.0
		BART	9.0		BART	19.0		BART	10.0
Southeast	5.0			7.0			2.0		
(Potrero Hill, Bayview, Hunters Point, East and South of 101)		Auto	26.0		Auto	13.0		Auto	10.0
		Muni	62.0		Muni	38.0		Muni	80.0
		BART	22.0		BART	50.0		BART	10.0
Peninsula	18.0			8.0			3.0		
(San Mateo and Santa Clara Counties)		Auto	44.0		Auto	50.0		Auto	25.0
		Muni	3.0		Muni	0.0		Muni	0.0
		BART	19.0		BART	30.0		BART	25.0
		SamT	7.0		SamT	10.0		SamT	0.0
		SPRR	27.0		SPRR	10.0		SPRR	50.0

TABLE E-1
(continued)

TRAVEL DISTRIBUTION AND MODAL SPLIT FOR CUMULATIVE ANALYSIS

Geographic Area	OFFICE								
	Work Travel			Other Travel			Retail Travel		
	Geog. %[1]	Mode	%[2]	Geog. %[1]	Mode	%[2]	Geog. %[1]	Mode	%[2]
EAST BAY	30.0			20.0			6.0		
(Alameda and Contra Costa Counties)		Auto	33.0		Auto	13.0		Auto	38.0
		BART	37.0		BART	79.0		BART	62.0
		AC	30.0		AC	8.0		AC	0.0
NORTH BAY[3]	12.0			8.0			2.0		
(Marin and Sonoma Counties)		Auto	58.0		Auto	70.0		Auto	70.0
		GGTB	35.0		GGTB	20.0		GGGTB	30.0
		GGTB	7.0		GGTB	10.0		GGTB	0.0

[1]Percent of travel with origins or destinations in each geographic area.

[2]Percent of travel in each geographic area using listed mode of travel.

[3]GGTB stands for Golden Gate Transit Bus; GGTF stands for Golden Gate Transit Ferry.

SOURCE: San Francisco Department of City Planning, TJKM, Environmental Science Associates.

development and occupancy. No allowance has been made for less than 100% occupancy, for proposed developments that are never constructed, or for those which would not be occupied within the time frame of the 600 Harrison Street project.

The employment trend approach generates a total increase in employment in downtown that has taken account of loss of employment as industries and offices move out of the City, replacement of one type of industry with another (industry shifts), as well as, replacement of existing office space with new office space. The employment trend approach makes no implicit assumptions concerning occupancy rates or actual square footage of development constructed; rather, it generates total employment increases from a standpoint which assigns jobs by metropolitan sector (area) based upon extrapolation of past trends and which considers long-term industry shifts to, within, and away from each area.

Note that neither of the two approaches has attempted to project future changes in modal split.

To illustrate the differences in projections resulting from the two approaches, Table E-2 (page A-46) shows the total employment projections by the two methods (and the project's share thereof), the regional distribution of trips, and Muni's share of the new transit travel (and the project's share thereof).

As shown in the table, the employment trend approach predicts about 19% fewer employees in the downtown and about one percent less riders on the Muni than does the land-use approach. The employment trend approach would thus approximate the transit demand impacts discussed on pages 85 through 88 of the EIR.

Several considerations concerning both of the methods need to be noted. The land-use approach, as it has been applied in San Francisco EIRs, analyzes impacts for the p.m. peak hour, whereas the employment trend approach analyzes the a.m. peak. Several reasons exist as to why one peak (or the other) may be the better one to analyze.

First, the p.m. peak may be more useful to analyze, in that actual observation shows that the p.m. peak has a greater overall effect on the local street network and transit system in the downtown area than does the a.m. peak, as more travel takes place during the p.m.

TABLE E-2

COMPARISONS OF LAND-USE AND EMPLOYMENT TREND APPROACHES

Approach	Downtown Employment Increase	Project[1] Share	Regional Trip Share S.F.	Pen.	E.B.	N.B.	Muni[2] Peak-hour Increase	Project[3] Share
Land Use	69,000	1.3%	49%	16%	24%	11%	12,750 (trips)	0.7%
Empl. Trend[4]	56,100	1.7%	50-54%	19%	17-21%	10%	12,900[5] (trips)	0.7%

NOTE: As explained in the text, comparisons between the entries for the two approaches must be made with the understanding that the land-use approach reflects increases in employment and transit demand based solely upon increases in downtown office space, while the employment trend approach reflects total increases therein based upon historical trends. The differences among the regional trip share figures reflect these and the other differences between the two approaches.

[1] Employment generated by the proposed 600 Harrison Street project, as a percent of the cumulative downtown employment increase.

[2] The Muni peak-hour increase is a demand projection (based upon existing and long-term employment trends) that is not dependent upon available or expected transit capacity.

[3] Muni peak-hour trips generated by the proposed 600 Harrison Street project, as a percent of the cumulative downtown Muni peak-hour increase.

[4] These figures, represent the worst-case analysis under the employment trend approach reviewed and accepted by MTC, ABAG and Muni. Note that the land-use approach entries assume that an additional net new 17.3 million gross square feet of office space will come on line by late 1990.

[5] Based on 54 percent regional trip split to San Francisco (worst-case).

peak. Also, transit service is more inclined to differ from scheduled times during the p.m. peak than during the a.m. peak, as operational delays have had an 8- to 10-hour period over which to accumulate. Finally, the on-ramps to the freeway/bridge system are greater bottlenecks (in the p.m. peak) than are the off-ramps (in the a.m. peak).

Conversely, the peaking characteristics of the a.m. peak may be more useful in that they are much sharper than those of the p.m. peak (i.e., a greater percentage of the peak-period occurs during a single hour). Also, as a result of the bridge system into San Francisco, travel inbound into the City is much easier to document, as tolls are collected on the inbound direction on the Golden Gate and Bay Bridges. Finally, a greater proportion of the travel occurring during the a.m. peak is employment-related; the p.m. peak includes shopping and pleasure trips which are not directly affected by increased office space.

The land-use approach, as it has been used in this Draft EIR, examines the p.m. peak because it has been observed to be the worst case for congestion on the City transportation system. This analysis does not reflect the spreading of the p.m. peak that is currently occurring, as all of the new trips have been assumed to take place in a single hour.

While the land-use approach assumes all new office space is fully occupied, the assumption of a functional vacancy rate of five percent is not uncommon.[6] With 17.3 million square feet of new office space assumed in the land-use approach to be occupied by 1990, a five percent vacancy would amount to approximately 865,000 square feet, representing 3,460 employees (at 250 square feet per employee), 700 of which would ride Muni in the p.m. peak hour. This adjustment for vacancy would thus reduce Muni peak-hour impacts in the cumulative analysis stated above by these 700 riders.

The land-use approach calculations have assumed transit capacity to be fixed at existing levels. The OER memorandum[7] points out, "It should be recognized that transportation is a more 'elastic' resource with many options for expansion including increasing existing capacity by using articulated vehicles, expanded car pool and van pool programs and increasing the peak commuter period through flex-time programs, among others."

If future office development does not occur along the lines of the past long-term trends as assumed in the employment trend approach, then the projections made in Working Paper I

would be revised. The average annual growth during the period 1965-1980 was less than the growth per year proposed, approved, or under construction for the period 1980-1984. The employment trend approach assumes average growth through 1990 would be at the lower historic rate, reflecting activity fluctuations from the current rate including slowdowns due to changing business conditions.

Until a forecast exists to determine how the current decade's cycle of development may differ from the past, a judgment of the applicability of results from Working Paper I may not be made. Consequently, this EIR has retained the land-use approach and presented this comparison of the employment trend approach. Both methods should be looked upon as describing potential scenarios of future conditions.

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[1]The regional distribution, office trip generation, trip purpose and peak hour percentage are from Attachment 1 of the Guidelines for Environmental Impact Review, Transportation Impacts, Department of City Planning, October 1980 and the modal split assignment is from Attachment 2 supplemented by survey data collected by Environmental Science Associates, Inc.

[2]Retail trip generation is from Trip Generation, Institute of Transportation Engineers (ITE), 1979. Rates have been adjusted from vehicle trip ends to person trip ends based upon an assumed vehicle occupancy of 1.4 persons per vehicle. The survey of retail travel was conducted by Environmental Science Associates at Embarcadero Center on Thursday, June 17, 1982 between 10:00 a.m. and 4:00 p.m.

[3]The percentage of work and non-work trips is from the Guidelines (see note 1) and from Urban Travel Patterns for Hospitals, Universities, Office Buildings, and Capitols, Report No. 62, National Cooperative Highway Research Program.

[4]East Bay auto occupancy is from data collected at the Bay Bridge toll plaza by the Metropolitan Transportation Commission; North Bay auto occupancy is from data collected at the Golden Gate Bridge toll plaza by the Golden Gate Bridge, Highway and Transportation District; Southern Peninsula auto occupancy is an estimate from Caltrans.

[5]The occupancy rate is from The Downtown Traffic and Parking Study, San Francisco Department of Public Works, 1970.

[6]Department of City Planning, Working Paper I, Projection of Long-range Transportation Demand, May 1982, prepared in cooperation with the Metropolitan Transportation Commission (MTC), the Association of Bay Area Governments (ABAG), and the Municipal Railway (Muni). Employment trend data was compiled by ABAG from trends in County Business Pattern (U.S. Department of Commerce, Bureau of the Census, March 12, 1979), with 1979 as the base year for future projections and regional distributions. Modal split data are from the 1975 Travel Survey prepared by MTC.

[7]The Department of City Planning, Office of Environmental Review (OER), has issued a memorandum, dated July 2, 1982, dealing with the subject of the differences in the land-use and employment trend approaches, and recommending that both approaches be used in future EIRs to give a more balanced assessment of future peak transportation demand. This memorandum is on file with and available from the Office of Environmental Review, 450 McAllister Street, 5th Floor. The memorandum calls out some of the fundamental differences between the two approaches and also details the limitations of each approach.

APPENDIX F

CUMULATIVE DEVELOPMENT

The list of projects shown in Table F-1, page A-52 includes all office projects in the greater downtown area and the South of Market area that are under construction or have been approved, and all projects for which a Preliminary Draft EIR has been submitted to the City for review or for which plans are well defined, and all office projects in redevelopment areas that are under construction or for which Land Disposition Agreements have been approved by the San Francisco Redevelopment Agency Commission. Projects that were not definitive and/or appear to be inactive or withdrawn by the project sponsor were not included in the cumulative analyses.

Two redevelopment areas (Yerba Buena Center and Rincon Point - South Beach) and one private development (Mission Bay) are located in or near the greater downtown area. In the redevelopment areas the majority of building sites do not yet have Land Disposition Agreements (LDA) approved. Until such time as specific LDA's are approved, no estimate of travel demand can be made. (Thus, parcels for which no LDA exists have not been included in the cumulative analyses.) Development in the Yerba Buena Center (YBC) Redevelopment Area will be in accordance with the YBC Redevelopment Plan, as amended. Possible land uses that would be in accordance with the Yerba Buena Center Redevelopment Area Plan include commercial entertainment, convention facility (in place), cultural, downtown support service, exhibit/ballroom space, hotel rooms, institutional, light industry, market-rate dwelling units, subsidized dwelling units, office, park or plaza, pedestrian concourse, parking and, retail.[1] Possible land uses in the Rincon Point - South Beach Redevelopment Area include hotel, housing, office, open space, public parking, retail and, warehouse uses.[2] Mission Bay has not been included in the cumulative analyses as no application has been submitted to the City and it is uncertain what formal proposal may be made.

Existing office and retail space that would be replaced by new buildings was subtracted from the proposed new construction to better approximate the impacts the new buildings would have on transportation facilities. As shown in Table D-2, net new office and retail space is less than total new construction as a result of subtracting out existing office and retail space on sites proposed for new buildings. ("Net new" space is used to refer to the amount of new construction in excess of existing space on each site in terms of gross square feet of floor space. It does not refer to net leasable or net rentable floor space.)

APPENDIX F

CUMULATIVE DEVELOPMENT

TABLE F-1

DOWNTOWN OFFICE PROJECTS UNDER FORMAL REVIEW, APPROVED OR UNDER CONSTRUCTION AS OF JANUARY 27, 1983

PROJECTS UNDER FORMAL REVIEW

Assessor's Block	Case No.	Project Name	Office Gross Sq. Ft. Total New Construction	Office Gross Sq. Ft. Net New Construction	Retail Gross Sq. Ft. Total New Construction	Retail Gross Sq. Ft. Net New Construction
110	82.129E	Embarcodero Terraces	142,000	142,000	3,000	3,000
112	81.258	Ice House Conversion (C)	209,000	209,000	---	---
113	82.418E	1171 Sansome	30,000	30,000	---	---
136	81.245	955 Front at Green	50,000	50,000	---	---
176	81.673	Columbus/Pacific Savoy	49,000	49,000	22,000	22,000
176	82.368ED	900 Kearny	25,000	25,000	5,000	5,000
228	81.610ED	569 Sacramento (C)	19,000	19,000	---	---
269	81.132ED	Russ Tower Addition	392,900	392,900	13,000	13,000
288	81.687ED	222 Keorny/Sutter	269,400	202,400	10,000	-8,400
331	81.448E	Mixed Use Development	218,600	207,600	44,700	19,700
669	81.667ED	1361 Bush (C)	45,720	45,720	---	---
716	81.581ED	Polk/O'Farrell	61,600	61,600	22,400	22,400
814	81.540E	101 Hayes	126,000	126,000	6,000	6,000
816	822.212E	330-350 Gough (C)	16,000	16,000	---	---
834	82.603E	25 Van Ness (Masonic Temple)	42,000	42,000	---	---
3702	81.549ED	1145 Market	137,500	108,500	8,000	8,000
3707	81.245C	New Montgomery Ploce	231,500	217,400	2,200	-3,900
3708	81.493ED	71 Stevenson at Ecker	324,600	324,600	6,200	6,200
3717	81.183E	123 Mission	342,800	342,800	---	---
3733	82.29E	832 Folsom	50,000	50,000	---	---
3750	82.241E	600 Harrison	228,000	228,000	10,000	10,000
3750	82.77E	642 Harrison (C)	54,400	45,900	---	---
3760	81.386	401 6th	7,000	7,000	---	---
3763	82.384EV	400 2nd Street at Horrison (C)	71,500	49,500	---	---
3778	81.630ED	548 5th/Bronnon	250,000	250,000	---	---
3786	82.33E	655 5th/Townsend	126,250	126,250	---	---
3788	82.352EV	640 2nd Street	39,100	37,400	---	---
3789	82.31EV	615 2nd/Brannon (C)	106,000	106,000	---	---
9900	81.63	Ferry Building Rehab	308,000	96,000	150,000	124,000
	TOTAL PROJECTS UNDER FORMAL REVIEW		3,972,870	3,607,570	302,500	227,000

(C) = Conversion

TABLE F-1
(continued)

APPROVED PROJECTS

Assessor's Block	Case No.	Project Name	Office Gross Sq. Ft. Total New Construction	Office Gross Sq. Ft. Net New Construction	Retail Gross Sq. Ft. Total New Construction	Retail Gross Sq. Ft. Net New Construction
58	82.234ED	Roundhouse	45,000	45,000	3,000	3,000
141		100 Broadway	13,000	13,000	---	---
143		1000 Montgomery (C)	39,000	39,000	---	---
161	80.191	Mirawa Center	36,000	36,000	30,650	30,650
164	81.631D	847 Sansome	23,750	23,750	---	---
164	81.573D	50 Osgood Place	22,500	22,500	9,100	9,100
166	80.15	750 Battery	105,400	105,400	12,800	12,800
240	81.705ED	580 California/Kearny	329,500	260,000	6,500	6,500
261	81.249ECQ	333 California	640,000	466,500	15,500	15,500
262	81.206D	130 Battery	41,000	41,000	---	---
265	81.195ED	388 Market at Pine	234,500	85,500	10,000	-8,500
267	81.241D	160 Sansome	2,200	2,200	---	---
268	81.422D	250 Montgomery at Pine	105,700	65,700	8,000	8,000
270	81.175ED	466 Bush	86,700	86,700	7,800	2,200
271		582 Bush	18,900	18,900	---	---
288	81.461ED	333 Bush (Campeau)	498,400	458,100	20,900	20,900
294	82.870	44 Campton Place	7,600	7,600	---	---
311	82.120D	S. F. Federal	246,800	218,850	1,600	-9,440
834		25 Van Ness (C)	101,600	101,600	36,400	36,400
3512	82.14	Van Ness Plaza	170,000	170,000	6,000	6,000
3518	81.483V	291 10th Street	25,700	25,700	---	-25,700
3705	80.315	Pacific III Apparel Mart	332,400	332,400	---	---
3707	81.492ED	90 New Montgomery	124,300	124,300	3,350	3,350
3709	81.113ED	Central Plaza	353,100	136,300	17,400	17,400
3715	82.16EC	121 Steuart	33,200	33,200	---	---
3722	81.417ED	144 Second at Minna	30,000	30,000	---	---
3724	81.102E	Holland Ct. (C)	27,850	27,850	---	---
3729	82.860	774 Tehama	5,800	5,800	---	---
3732	81.548DE	466 Clementina (C)	15,150	15,150	---	---
3733	81.2	868 Folsom	65,000	65,000	---	---
3735	80.106	95 Hawthorne (C)	61,900	61,900	---	---
3738	DR80.5	315 Howard	294,000	294,000	3,200	3,200
3741	82.203C	201 Spear	229,000	229,000	5,200	5,200
3749	81.18	Marathon - 2nd & Folsom	681,700	681,700	39,300	39,300
3752	77.220	Office Bldg. (YBC SB-1)	11,000	11,000	---	---
3763	81.287V	490 2nd/Bryant (C)	40,000	40,000	---	---
3763	81.381	480 2nd/Stillman (C)	35,000	35,000	---	---
3775	81.147V	338-340 Brannan (C)	36,000	36,000	---	---
3776	81.693EV	539 Bryant/Zoe	63,000	63,000	---	---
3776	81.59	Welsh Commons	55,600	55,600	12,000	12,000
3787	81.306	252 Townsend at Lusk	81,900	81,900	---	---
3788	81.296Z	690 2nd/Townsend (C)	16,600	16,600	16,000	16,000
3789	81.552EV	625 2nd/Townsend (C)	157,000	157,000	---	---
3794	81.569EV	123 Townsend	104,000	49,500	---	---
3794		155 Townsend	19,000	19,000	---	---
3803	81.244D	China Basin Expansion	196,000	196,000	---	---
	TOTAL APPROVED PROJECTS		5,861,750	5,090,200	264,700	203,860

TABLE F-1
(continued)

PROJECTS UNDER CONSTRUCTION

Assessor's Block	Case No.	Project Name	Office Gross Sq. Ft. Total New Construction	Office Gross Sq. Ft. Net New Construction	Retail Gross Sq. Ft. Total New Construction	Retail Gross Sq. Ft. Net New Construction
106	81.415ED	1299 Sansame	41,000	41,000	3,500	3,500
163	81.1	901 Montgamery	63,000	63,000	18,800	18,800
164	81.251D	936 Mantgamery	21,500	11,500	---	---
166	CU81.7	222 Pacific/Front (C)	142,000	142,000	---	---
167		Golden Gateway III	103,000	103,000	---	---
196		736 Montgamery	40,000	40,000	---	---
196	CU79.49	Pacific Lumber Co.	92,000	92,000	---	---
206	81.165D	401 Washington at Battery	13,200	13,200	1,800	1,800
208	81.104EDC	Washingtan/Mantgomery	235,000	233,300	4,000	-1,200
227	80.296	Bank of Cantan	230,500	177,500	---	-800
237	DR80.6	353 Sacramenta (Daon)	277,000	251,000	8,300	-2,000
239	DR80.1	456 Montgamery	160,550	160,550	24,250	24,250
240	DR80.16	550 Kearny	71,400	71,400	---	---
263	CU79.12	101 Califarnia	1,265,000	1,257,000	24,700	-14,300
271	81.517	453 Grant	27,500	27,500	6,200	6,200
287	81.550D	Slaane Building (C)	125,300	125,300	30,000	30,000
288	DR80.24	101 Mantgamery	264,000	234,000	5,900	-14,100
289	81.308D	One Sansame	603,000	603,000	7,000	7,000
292	DR79.13	Crocker National Bank	676,000	495,000	86,000	54,000
312	79.370	50 Grant	90,000	90,000	---	---
351	DR79.24	Mardikian/1170 Market	92,050	92,050	---	---
351	79.133	U.N. Plaza	40,000	40,000	---	---
672		Sutter/Franklin (Wealth Investment)	104,500	104,500	---	---
738		One Flynn Center	25,000	25,000	---	---
762		Opera Plaza	50,000	50,000	---	---
3702	81.25	1155 Market/8th	138,700	138,700	8,800	8,800
3708	80.34	25 Jessie/Ecker Square	111,000	111,000	---	---
3709	80.36	Five Fremont Center	791,200	722,200	35,000	17,300
3712	79.11	Federal Reserve Bank	640,000	640,000	---	---
3715		141 Steuart	80,000	80,000	---	---
3717	79.236	101 Missian at Spear	219,350	219,350	---	---
3717		150 Spear	330,000	330,000	---	---
3717	80.349	Spear/Main (160 Spear)	279,000	279,000	7,600	7,600
3717	82.82D	135 Main	260,000	260,000	4,000	4,000
3718	79.12	Pacific Gateway	540,000	540,000	7,500	7,500
3724		Yerba Buena West	335,000	335,000	---	---
3735		Canventian Plaza	339,000	339,000	---	---
3735		Planter's Hatel (C)	20,000	20,000	---	---
	TOTAL PROJECTS UNDER CONSTRUCTION		**8,935,750**	**8,557,050**	**283,350**	**158,350**

(C) = Canveraian

[1]Land uses from Draft Second Supplement Yerba Buena Center Final Environmental Impact Report, San Francisco Department of City Planning, May 28, 1982.

[2]Land uses from Rincon Point - South Beach Redevelopment Area, San Francisco, California, Final Environmental Impact Report/ Environmental Impact Statement, San Francisco Department of City Planning, certified November 5, 1980.

TABLE F-2

GROSS SQUARE FEET OF CUMULATIVE OFFICE AND RETAIL DEVELOPMENT IN DOWNTOWN SAN FRANCISCO AS OF JANUARY 27, 1983

	Office (Gross Sq. Ft.)		Retail (Gross Sq. Ft.)	
Status of Project	Total New Construction	Net New Construction	Total New Construction	Net New Construction
Under Formal Review	3,972,870	3,607,570	302,500	227,000
Approved	5,861,750	5,090,200	264,700	203,860
Under Construction	8,935,750	8,557,050	283,350	158,350
GRAND TOTALS	18,770,370	17,254,820	850,550	589,210

TABLE F-3

MAJOR OFFICE BULDING CONSTRUCTION
IN SAN FRANCISCO (IN GROSS SQUARE FEET)

Year	Total Gross Square Feet Completed	5-Year Total	5-Year Annual Average	Cumulative Total of Office Buildings[2]	Cumulative Total of All Downtown Office Buildings[3]
Pre-1960				28,145,000	24,175,000
1960	1,183,000				
1961	270,000				
1962	-				
1963	-				
1964	1,413,000				
1960-1964		2,866,000 (2,580,000)[1]	563,200 (516,000)[1]	30,725,000	26,754,000
1965	1,463,000				
1966	973,000				
1967	1,453,000				
1968	1,234,000				
1969	3,256,000				
1965-1969		8,379,000 (7,541,000)[1]	1,675,800 (1,508,000)[1]	38,266,000	34,295,000
1970	1,853,000				
1971	-				
1972	1,961,000				
1973	2,736,000				
1974	2,065,000				
1970-1974		8,615,000 (7,753,000)[1]	1,723,000 (1,550,000)[1]	46,019,000	42,048,000

(continued)

TABLE F-3

MAJOR OFFICE BULDING CONSTRUCTION
IN SAN FRANCISCO (IN GROSS SQUARE FEET)(continued)

Year	Total Gross Square Feet Completed	5-Year Total	5-Year Annual Average	Cumulative Total of All Office Buildings[2]	Cumulative Total of All Downtown Office Buildings[3]
1975	536,000				
1976	2,429,000				
1977	2,660,000				
1978	-				
1979	2,532,000				
1975-1979		8,157,000 (7,341,000)[1]	1,631,400 (1,468,000)[1]	53,360,000	49,389,000
1980	1,284,000				
1981	3,029,000				
1980-1981		4,313,000[4] (3,881,700)[1]	2,156,500[4] (1,940,850)[1]	57,243,000	53,270,700

[1]Net Total. Net new space is added at an increase factor of 90%, since it is assumed that space equal to 10% of a new building is demolished to make land available for the new replacement building

[2]Source: San Francisco Downtown Zoning Study, Working Paper No. 1, January 1966, Appendix Table 1, Part 1. For pre-1965, data include the area bounded by Vallejo, Franklin, Central Skyway, Bryant and Embarcadero. Also includes one-third of retail-office mixed use. For post-1964, data include the entire city.

[3]Gross Floor Space for downtown offices are included for the following functional areas: Financial, Retail, Hotel, Jackson Square, Golden Gateway, Civic Center, South of Market, and Outer Market Street as defined in the cited January 1956 report. For post-1964, the entire area east of Franklin Street is included.

[4]Two-year total and average.

SOURCE: Department of City Planning

APPENDIX G

EMPLOYMENT, HOUSING AND FISCAL FACTORS

TABLE G-1

PROJECTED EFFECTS OF DOWNTOWN OFFICE DEVELOPMENT ON REGIONAL HOUSING MARKETS

Housing Market	Net Project Demand in 1985	Gross Cumulative Demand 1982 to 1990[3]		Net[4] Housing Stock 1982-1990	Project Demand as % of Growth 1982-1987	Cumulative Demand as % of Growth 1982-1987
	Number of Households	Number of Employees	Number of Households			
San Francisco[1]	143-296	10,350 to 27,600	7,400 to 15,300	12,000	1.2-2.5	62%-127%
North Bay[2] (Marin and Sonoma Counties)	123	8,300	6,400	36,800	0.3	17%
Peninsula[2] (San Mateo and Santa Clara Counties)	184	12,400	9,500	87,000	0.2	11%
East Bay[2] (Alameda and Contra Costa Counties)	307	20,700	15,900	111,800	0.3	14%
TOTAL	757-910	51,750 to 69,000	39,200 to 47,100	247,000 to 248,200	0.3-0.4	16%-19%

[1] The range of San Francisco employees and households based on a report prepared by Recht Hausrath Associates, referenced as Appendix C in the 10 Montgomery Street Final EIR, EE 80.26, certified May 7, 1981 (15-30% of all employees would reside in San Francisco and 1.4 workers would occupy each household) and "Office Housing Production Program (OHPP) Interim Guidelines," Department of City Planning, January 22, 1982 (40% of all employees would reside in San Francisco and 1.8 workers would occupy each household).

[2] Distribution of employees based on weighted average of expected employees in Federal Reserve Bank (EE 78207), 101 California Street (EE 78.27), Pacific Gateway, (EE 78.61), and Crocker National Bank (EE 78.298), from 456 Montgomery Street Final EIR (EE 78.178), page 167 (12% in the North Bay, 18% in the Peninsula, 30% in the East Bay).

Project workforce of 1,330 and a ratio of 1.3 workers per household for based on 1980 Census data.

[3] Cumulative housing demand calculated from data on office projects presented in Table F-2, Appendix F including those under construction (8,557,050), approved (5,090,200 sq. ft.), and under formal review (3,610,320 sq. ft.).

[4] Net housing stock growth is based on "Projections 79," Association of Bay Area Governments, January 1980. Projections contained in that document for 1980-1990 were prorated to reflect 1982-1990 net housing stock growth.

TABLE G-2

HOUSING AFFORDABILITY BY HOUSEHOLD INCOME

Gross Annual Income Per Household or Per Individual	Maximum Affordable Monthly Housing[1] Expenditure	Housing Cost and Type of Unit	
		Monthly[2] Cost	Type of Unit (Price)
$ 5,000	$ 125		
8,300[3]	208		
10,000	250		
10,680	267	$ 267-	Census Median Rent[6]
11,560	289	289-	Studio Apartments[7]
15,000	375		
18,200	455	455-	Median Rent, All Units[7]
20,000	500		
23,520	588	588-	Rent, 3+ Bedroom Units[7]
25,000[4]	625		
27,300	683		
30,000	750		
35,000	875		
40,000	1,000		
40,880	1,022	1,022-	Lowest House Price ($95,000)[8]
45,000	1,125	1,125-	Census Median Value (104,600)[6]
50,000	1,250		
52,560	1,314		
55,000	1,375		
65,080	1,627	1,627-	Median House Price (151,203)[8]
101,880	2,547	2,547-	Highest House Price (236,750)[8]
300,000[5]	7,500		

Footnotes on following page

[1]The Office Housing Production Program (OHPP) Interim Guidelines, January 1982, define affordable housing as follows:

> Rental expenses not exceeding 30% of gross monthly income, adjusted for family size; and home ownership expenses not exceeding 38% of gross monthly income, adjusted for family size, including mortgage payments, property taxes, insurance, and/or homeownership association dues.
>
> For the purpose of this table, 30% of gross monthly income is used to calculate housing affordability for both renters and owners. For owners it is assumed that eight percent of gross monthly income would cover property taxes, insurance, and/or homeownership association dues and other related expenses. No adjustment has been made for family size because family circumstances vary widely.

[2]Monthly housing costs refer to rents and mortgage payments for the housing prices shown in parentheses; sources of rents and house prices are as footnoted. Monthly costs of ownership housing were calculated as monthly mortgage expenses assumping 20% down payment, 30-year mortgage, and 16% interest rate, not including insurance, property taxes, and other related housing costs.

[3]U.S. Bureau of Labor Statistics, March 1981, "Area wage survey for the San Francisco-Oakland, California Metropolitan Area," $8,300 was the mean 1980 income if inexperienced file clerks, one of the lowest-paid office occupations listed.

[4]The $27,300 income figure was derived by inflating the $16,300 median income of downtown office workers from the 1974 SPUR survey through December 1981 by 67% using U.S. Bureau of Labor Statistics national wage information for nonsupervisory finance, insurance, nd real estate sector employees since 1974.

[5]Montgomery-Washington Building FEIR, 81.104E, certified January 28, 1982. The median salary of wage earners at 601 Montgomery Street was estimated to be $52,560 and the highest salary for corporate officers $300,000, according to a 1981 survey.

[6]City Planning and Information Services, "1980 Census Information," March 1982: Rental data include residential hotels whose rent levels may be substantially lower than other types of rental dwellings and may therefore have an effect on the median rent.

[7]Department of City Planning, "Rent Survey," 1980. These data are based on a small nonrandom sample of newspaper ads and may not reflect true rental costs.

[8]San Francisco Board of Realtors, "Multiple Sales Service," October 5, 1981. (Annual data on housing sales prices including all homes sold from February 11, 1981 to October 1, 1981).

NOTE: The age of the 1974 SPUR study referenced in footnote 4 above and the small sample size of the 601 Montgomery Street survey referenced in footnote 5 limit the statistical accuracy of the data when applied to individual proposed office projects. These two sources constitute the only salary information available for downtown San Francisco employees.

TABLE G-3

SUMMARY OF RECENT STUDIES ON FISCAL IMPACTS OF DOWNTOWN DEVELOPMENT

STUDY, AUTHOR, DATE	PURPOSE OF STUDY	DATA SOURCES	STUDY METHODOLOGY	CONCLUSIONS
"Fiscal Concerns" in Downtown San Francisco Conservation and Development Planning Program, Phase I Study, Sedway/Cooke, et al., October 1979, pp. 56-59	To qualitatively assess the likely fiscal impact of new development in the C-3 area under Proposition O.	SPUR STUDY (1975)	SPUR cost/revenue estimates for downtown in 1973 and for projected growth 1974-1990 were assumed. Proposition 13's effect on revenues and the possible need for increased transportation infrastructure were considered. Generalized conclusions about fiscal impact of new development were drawn.	1) After Proposition 13, "costs may exceed revenues in the downtown by as much as 25%." 2) "[N]ew downtown development will not solve the city's growing fiscal problem; without new revenue sources, development will make it worse in the long run."
Downtown Highrise District Cost Revenue Study, Arthur Andersen & Co., November 1980	To quantify for 1976-77 and 1978-79 how much revenue the C-3-O area generated and how much it costs to provide city services to the area.	Data compiled from city records and through conversations with city officials.	Only revenues generated within the C-3-O and costs of providing services to the C-3-O counted. "The principle guiding the study methodology was to calculate the amount of revenue that San Francisco would lose and the costs that could be reduced if the Downtown Highrise District were a separate city."	The C-3-O generated $56.79 million in 1976-77, or 61% more than the cost of city services to the area. In 1978-79, revenues were $53.29 million, or 48% greater than costs.
"Fiscal Considerations" Appendix C, 101 Montgomery Street FEIR, Recht Hausrath & Associates, January 1981.	To draw generalized conclusions about "how new development downtown in a post-Proposition 13 environment is likely to change the City's fiscal health from what it would be without new development."	SPUR Study, city records and conversations with city officials.	Under alternative assumptions about the cost/revenue balance in existing buildings and in new buildings, the fiscal impact over time of new development was compared to that of no new development.	"[A]n on-going process of new development would improve the City's fiscal situation.
Downtown Highrise District Cost/Revenue Study, David Jones, February 1981.	To quantify for 1978-79 the revenues generated by businesses in the C-3-O and the service costs imposed on the city and BART by the C-3-O.	Arthur Andersen study.	The Jones study differs from the Andersen study primarily as follows: 1) Costs of BART (but not revenues to BART) are included; 2) Only revenues paid by businesses and building owners are considered; 3) Muni deficit is computed differently; 4) Most costs are estimated as a percentage of revenues rather than on the basis of actual service demand in the C-3-O.	The C-3-O imposed costs of $94.4 million on San Francisco and BART, or 125% more than the revenues the area's businesses and building owners generated to San Francisco.
Fiscal Impacts of New Downtown High-Rises on the City and County of San Francisco, Gruen Gruen + Associates March 1981	To quantitatively estimate city revenues from the C-3-O and costs of serving the C-3-O in 1998, assuming the addition of 30 million square feet of building space in the C-3-O between 1981 and 1998.	Arthur Andersen study; data compiled from city records and through conversations with city officials.	"Only direct effects are considered." Costs are only measured for services "provided within the physical limits of the C-3-O district" and revenues are limited to "taxes on buildings within the district and the activities that take place within those buildings." Assumes the Arthur Andersen study is accurate and builds upon it.	In 1980, revenues from the 39 million square feet of building space in C-3-O were 1.66 times as large as costs. In 1998, after completion of the 30 million square feet of new space, revenues from the entire 69 million square feet of C-3-O building space would increase to 1.92 times as large as costs.

SOURCE: Recht, Hausrath and Associates, January 1981.

APPENDIX H

AIR QUALITY

SAN FRANCISCO AIR POLLUTANT SUMMARY 1979-1981[1]

POLLUTANT	FEDERAL STANDARD[2]	STATE STANDARD[3]	1979	1980	1981
Carbon Monoxide (CO)					
1-hour average (ppm)	35	20			
Highest hourly average			20	10	8
No. of exceedances			0	0	0
8-hour average (ppm)	9	None			
Highest 8-hour average			13.8	7.5	5.3
No. of exceedances			1	0	0
Ozone (0_3)					
1-hour average (ppm)	.12[4]	.10			
Highest hourly average			0.08	0.09	0.07
No. of exceedances			0	0	0
Nitrogen Dioxide (NO_2)					
1-hour average (ppm)	None	.25			
Highest hourly average			0.16	0.17	0.11
No. of exceedances			4	0	0
Sulphur Dioxide (SO_2)					
24-hour average (ppm)	None	.05			
Highest 24-hour average			0.034	0.018	0.016
No. of exceedances			0	0	0
Total Suspended Particulate (TSP)					
24-hour average (ug/m3)	None	100			
Highest 24-hour average			117	173	103
No. of exceedances			1	6	1

AIR QUALITY

SAN FRANCISCO AIR POLLUTANT SUMMARY 1979-1981[1]

POLLUTANT	FEDERAL STANDARD[2]	STATE STANDARD[3]	1979	1980	1981
Annual Geometric Mean (ug/m3)[5]	None	60			
Annual Geometric Mean			42.0	52.1	56.0
Annual Exceedances			No	No	No
Lead					
3-month Average (mg/m3)	None	1.5			
Highest 3-month average			0.95	0.53	0.35
No. of exceedances			0	0	0

[1] 1979 data collected at 939 Ellis Street. 1980-81 data collected at 900 23rd Street.

[2] Federal standard is not to be exceeded more than once per year. Annual average standards are not be exceeded.

[3] State standards are not to be equalled or exceeded. The State 1-hour average CO standard was reduced from 40 ppm to 20 ppm in 1982.

[4] The federal standard is given in terms of Expected Annual Excesses which is based on a 3-year running average.

[5] The annual Geometric Mean is a single number which applies to an entire year of data. "No" indicates TSP concentrations did not exceed 60 (ug/m3).

Note: ppm = parts per million
ug/mg3 = micrograms per cubic meter
mg/m3 = milligrams per cubic meter

Source: BAAMQD, Air Pollution in the Bay Area by Station and Contaminant; and California Air Resources Board, California Air Quality Data.

APPENDIX I

ARCHAEOLOGICAL REPORT

ARCHEO-TEC
Consulting Archaeologists
114 Wilding Lane
Oakland, California 94618
(415) 658-3109

Mr. George Burwasser
Environmental Impact Planning Corporation
319 Eleventh Street
San Francisco, California 94103

26 January 1983

Dear Mr. Burwasser:

At your request, I have just completed a cultural resources evaluation of the property at 600 Harrison Street in San Francisco. As we discussed, my work was specifically intended to determine if potentially significant archaeological resources existed within the subject parcel which might suffer adverse impacts as a result of planned construction and development. The subject parcel is situated in San Francisco's South of Market district, at the northwest corner of Harrison and Second streets: as can be seen in figure 1, below, the property measures approximately 230 feet in length and 100 feet in width. My work was limited in scope and consisted of two basic components: 1) a review of pertinent archival sources concerning the history and development of the subject property and its immediate surroundings; 2) and an on-site reconnaissance of the subject parcel consisting of the archaeological monitoring and evaluation of four geo-technical borings placed prior to the commencement of construction activities. The results of these investigative procedures, as well as appropriate conclusions and recommendations, are contained in the pages which follow.

Before the on-site field survey of the property was undertaken, the above mentioned archival review was conducted. Maps and other archival materials on file within the Department of Anthropology at Sonoma State University were consulted, as were documents in the library of Archeo-Tec in Oakland, California. Since I have personally conducted intensive archaeological research in the South of Market area prior to the start of the present project (see Olmsted, Olmsted and Pastron 1977;1979, Olmsted, Olmsted, Pastron and Prichett 1979 and Pastron 1978), I was aware that a prehistoric archaeological site had been recorded in the vicinity of 600 Harrison Street: I therefore paid particular attention to the possibility of encountering pre-European cultural resources within the confines of the present subject parcel.

Prehistoric remains are among the most significant types of cultural resources studied by archaeologists interested in the San Francisco Bay region. When the Spanish first entered central, California some two centuries ago, the region possessed what has been described as "the densest Indian population anywhere north of Mexico" (Margolin 1978:1). It is

estimated that between 7,000 and 10,000 individuals inhabited the coastal areas between Point Sur and the San Francisco Bay (ibid; Kroeber 1925: 464). These prehistoric inhabitants left behind a prolific archaeological record. Kroeber noted that "the entire Costonoan frontage on ocean and bay is lined with shell deposits. San Francisco Bay in particular is richer in such remains than any other part of the state, except perhaps the Santa Barbara Islands" (ibid). Shellmounds-- vast heaps of broken shell mixed with piles of ash where generations of native foragers deposited their refuse-- constitute the single most common archaeological manifestation near the shores of the bay. When N.C. Nelson conducted the first intensive archaeological survey of the region in 1908, he recorded and mapped no fewer than four hundred and twenty-five shellmounds on or near the shores of the bay (Nelson 1909). This number must represent but a small percentage of the archaeological sites which existed in the area at the end of the prehistoric period, since one must bear in mind that by 1908 the overall size of the bay had been considerably reduced and urban growth had already destroyed or covered over a great many prehistoric deposits.

Considering the wealth of archaeology that once existed in the San Francisco Bay area, relatively few sites have been investigated in a systematic fashion, and the complex prehistory of the region is not nearly as well understood as most archaeologists would like. San Francisco and its environs grew rapidly during the last half of the nineteenth century and, as a consequence, a great many archaeological sites were either covered over, damaged or entirely destroyed. The process of site destruction continues today: every year numerous archaeological deposits in California are adversely impacted by development or other processes of land modification (see, for example, Clewlow et al 1971).

Within the last two decades, a new generation of archaeologists has arisen with the knowledge that prehistoric sites in the Bay Area are becoming an endangered species; as a result, there has been a resurgence of interest among professionals in local prehistory: a number of recent field projects (Fredrickson 1968, Gerow and Force 1968, Wallace and Lathrap 1975) have stimulated renewed discussions of a theoretical nature about the region's complex archaeological sequence and cultural history (Bickel 1976, Fredrickson 1974a;1974b, C. King 1978, T. King 1974, Regir 1972).

Contemporary archaeologists have come to the realization that they are faced with a rapidly declining data base in the face of the fast development of the San Francisco Bay area. Yet, a host of essential questions concerning the economic, political and social patterns of the region's pre-European inhabitants remain to be answered. For this reason, most prehistorians would consider any relatively intact archaeological site located in the vicinity of the bay to be of great potential importance (i.e., Glassow 1977, Moratto and Kelly 1976). It is for precisely this reason that I have presently attached so much potential import to the fact that a prehistoric archaeological site has been recorded in the vicinity of the present project area at 600 Harrison Street.

A review of available archival sources revealed that no recorded prehistoric site was known to exist within the subject parcel at 600 Harrison Street. The nearest recorded prehistoric site was located approximately one block away, on the south side of Harrison Street, west of Third, immediately adjacent to lot # 733. This site, now known as Ca-SFr-2, was first recorded as Shellmound # 439 By Nelson during his exhaustive 1908 archaeological survey of the San Francisco Bay region. The site came to light, as do so many archaeological deposits situated in urban areas, during the course of construction work in 1929. Unfortunately, by the time archaeologists were notified and arrived on the scene, earthmoving equipment had already caused considerable damage to the site.

Even though this site is situated a block away from the present project area, it is worth summarizing its characteristics, since any prehistoric deposits encountered at 600 Harrison Street would, in all likelihood, be very similar to Ca-SFr-2.

E.W. Gifford of the University of California investigated the site, and from his description it appears to have been a relatively typical San Francisco shellmound. The site contained a paucity of lithic material and no human skeletal remains, but yielded some mammal and bird bones as well as abundant cooking stones and, of course, massive quantities of shell. A good deal of charcoal was noted but none saved, since in those days prior to the development of the radiocarbon dating method nothing could be done with such samples of organic matter. Hence, there are no chronometric dates for the site. The material that was collected was transferred to the Lowie Museum of Anthropology under the accession number 1-27097.

At the time of its discovery, Ca-SFr-2 was approximately 4-5 feet deep and of unknown horizontal extent. Its maximum depth was approximately 10 feet below street level. The site may once have been more extensive than was observable at the time of its investigation, since the remains of an old building were resting on top of the archaeological deposits. This occurrence suggests that the site might have been cut away to an unknown extent prior to the erection of the above mentioned building. It is generally agreed that this site was destroyed during the course of the 1929 construction activities (Kelly 1976:45). (The above remarks about Ca-SFr-2 have been drawn from the original site survey records on file at the University of California at Berkeley).

Although a tantalizing prospect, it would be difficult to estimate the possibility of a previously unrecorded aboriginal shellmound being located in the immediate vicinity of Ca-SFr-2. Certainly the existence of one mound demonstates that the area had the physical qualities required for such prehistoric occupation and usage. There is abundant evidence from investigation of other San Francisco Bay area sites that one shellmound did not eliminate or significantly reduce the possibility of use of an alternative site nearby. For example, the investigation of the Steqe Mounds at Richmond, across the bay, revealed three separate sites approximately 200 to 500 feet apart (Loud 1924:355-372). Therefore, the presence of Ca-SFr-2 at Third and Harrison streets can not be taken

as proof that other prehistoric shellmounds were not located nearby.

A suggestion of the above possibility was unearthed during archaeological testing at Third and Folsom streets in 1978. There, at the southeastern most corner of the site of the George R. Moscone Convention Center, the present writer recovered an obsidian scraper of undisputed aboriginal manufacture from a test boring at a depth of approximately 20 feet (Pastron 1978:210). Unfortunately, no additional provenience data could be ascribed to this artifact and no other aboriginal materials were recovered during archaeological fieldwork at the Moscone Convention Center site. But such a find at about the same distance from Ca-SFr-2 as 600 Harrison Street points up the possibility that prehistoric materials may conceivably be encountered within a radius of a block or more from a recorded shellmound deposit.

I must also point out that because the present subject parcel has been paved over and/or built upon periodically for more than a century does not, in and of itself, preclude the possibility of encountering a prehistoric site in relatively intact condition. In the eastern part of the United States, where urban centers were well established before Europeans settled in California, archaeologists have unearthed remarkably intact and valuable prehistoric deposits from sites that have been paved or otherwise covered over for as much as two centuries (Huey et al 1977:19).

At this point, I feel that I must once again state that the historical sources in no way indicate that a prehistoric site is situated on the northwestern corner of Harrison and Second Streets. However, as the above remarks suggest, the prospect of encountering such a site is an event of considerable significance to the archaeological community of the San Francisco Bay area, and in the present case the proximity of such a site to the project area warrants a cautious approach. The above remarks are designed to reflect this professional caution and to provide a certain amount of baseline data as to the nature of the once common, but now extremely rare, San Francisco Bay shellmound.

The present report is not an appropriate forum for a detailed discussion of the development of the South of Market district since the Gold Rush period: readers concerned with a comprehensive treatment of this subject are referred to a number of historical surveys of the area made during the last few years in connection with Cultural Resources Management projects (Olmsted, Olmsted and Pastron 1977;1979, Olmsted, Olmsted, Pastron and Prichett 1979, Wirth Associates 1979). Here, I shall provide a capsule summary of the history of the project area in question.

A review of U.S. Coast Survey charts and the mappings of the Sanborn Insurance Company provide an outline for the development of the block containing 600 Harrison Street from the early 1850s to the eve of the Great Earthquake and Fire of 1906. The earliest mapping, the 1852 U.S. Coast Survey chart, reveals that the northwest corner of Harrison and Second streets, was still in a natural state at that time. In fact, in 1852, the entire block contained only two small structures, both at the southwestern corner of the intersection of Folsom and Second streets.

By 1857, the date of the next U.S. Coast Survey mapping, the block had developed considerably. A single rectangular structure with a square projection extending from its western side (perhaps a porch or small wing) stood in the approximate center of the present subject property. Unfortunately, the U.S. Coast Survey map is not sufficiently detailed to permit any further analysis of this structure. The next U.S. Coast Survey mapping, made in 1869, shows that the entire northwest corner of Harrison and Second streets had been developed. However, since this mapping was done in schematic fashion, and does not attempt to depict actual structures, it is impossible to determine how many new buildings had been erected on the property, or whether the structure seen in the 1857 Coast Survey map was still present on the site or not.

The next document consulted, the 1887 Sanborn Insurance Company map, shows that the entire block containing the subject property had been intensively developed. Like other parts of the South of Market district, the block was a densely populated, multi-ethnic, working-class neighborhood containing shops, saloons, several Chinese laundries, lodging establishments, a coalyard, some light industry and a variety of individual residences ranging from small, comfortable flats to tenement dwellings. If the pattern of most of the South of Market district was followed in this block, an almost continual spate of building, cutting and filling had occurred since the late '50s or early '60s. A detailed history of the nature of life South of Market during this period can be found in Olmsted, Olmsted, Pastron and Prichett 1979.

In 1887, a number of structures stood within the confines of the present subject property. A two-story, wood frame building stood on the corner of Harrison and Second streets. We do not know how long this structure survived, but it is almost certain that if it was still standing in 1906, it was, like most of the buildings South of Market, destroyed in the Great Fire. Following the Great Earthquake and Fire, the South of Market rebuilt, and a new set of structures stood within the present subject property. The present historic survey, however, has not outlined the post-earthquake development and reconstruction of the subject property.

In summary, we can see that the subject property has contained several sets of structures, and has been subject to intensive land modification and development, since it was first built upon in the middle 1850s. In general, development within the subject property followed a typical South of Market pattern, and no evidence came to light suggesting that potentially significant cultural remains might be expected beneath the surface of the ground at the project site.

Field Reconnaissance

On January 20, 1983, a total of four mechanical geo-technical exploratory borings were placed within the subject property. The locations of these mechanical probes can be seen on figure 1, labelled EB 1-4. All of these borings were monitored and evaluated archaeologically under my overall supervision. Whenever cultural materials were encountered, they

were examined and evaluated. Each boring was excavated with a 6 inch flight auger. Every time the auger was removed from the boring-- at approximate intervals of 1 foot-- the excavated spoil was examined to determine if any cultural materials had been encountered. When unearthed each cultural item was examined to assess its potential significance. Special attention was paid to the possibility of encountering archaeological materials of prehistoric age. Each boring was monitored until it was certain that non-cultural subsoil or bedrock had been reached. In practical terms, this depth was at 10 feet or less below the present day ground surface level. Schematic soil profiles for the four test borings placed within the subject property are presented below.

The four test borings revealed nothing to suggest that potentially significant cultural resources lay beneath the surface of the ground within the confines of 600 Harrison Street. No traces of prehistoric archaeological materials were encountered. In fact, cultural materials of any type or age were relatively rare in the four test probes. Borings 1 and 4 were totally devoid of cultural items. Boring 2 yielded a few, scattered glass fragments to a depth of about 7 feet. Only Boring 3 contained any quantity of cultural refuse: between the ground surface and a depth of 3½ feet, glass, metal, wood and ceramic fragments were encountered. Few of these specimens were diagnostic, but several of the broken glass bottles were sufficiently intact to suggest a dating to the post-1906 era. No further cultural specimens were encountered in Boring 3 below a depth of 3½ feet.

In summary, the four test borings placed within the subject property recovered no evidence to suggest that potentially significant cultural resources exist below the ground surface. These findings, coupled with the archival search, lead to the conclusion that development within 600 Harrison Street will result in no adverse impacts to identifiable cultural resources. Based upon this conclusion, no additional archaeological procedures are recommended at this time. However, it must be pointed out that the four test borings probed only a tiny portion of the entire project area; it is conceivable that undetected cultural resources of potential significance lie somewhere within the subject property. Therefore, if any such materials are encountered at any time during the course of developing the property, the project sponsor shall be responsible for halting all construction activity in the area of potential impact until such time as a qualified archaeologist is retained to examine the findings, evaluate their significance and make appropriate recommendations to mitigate any adverse impacts which may occur as the result of the work being conducted.

I hope that these remarks answer your questions concerning the potential for cultural resources at 600 Harrison Street. If I can add anything else, please let me know.

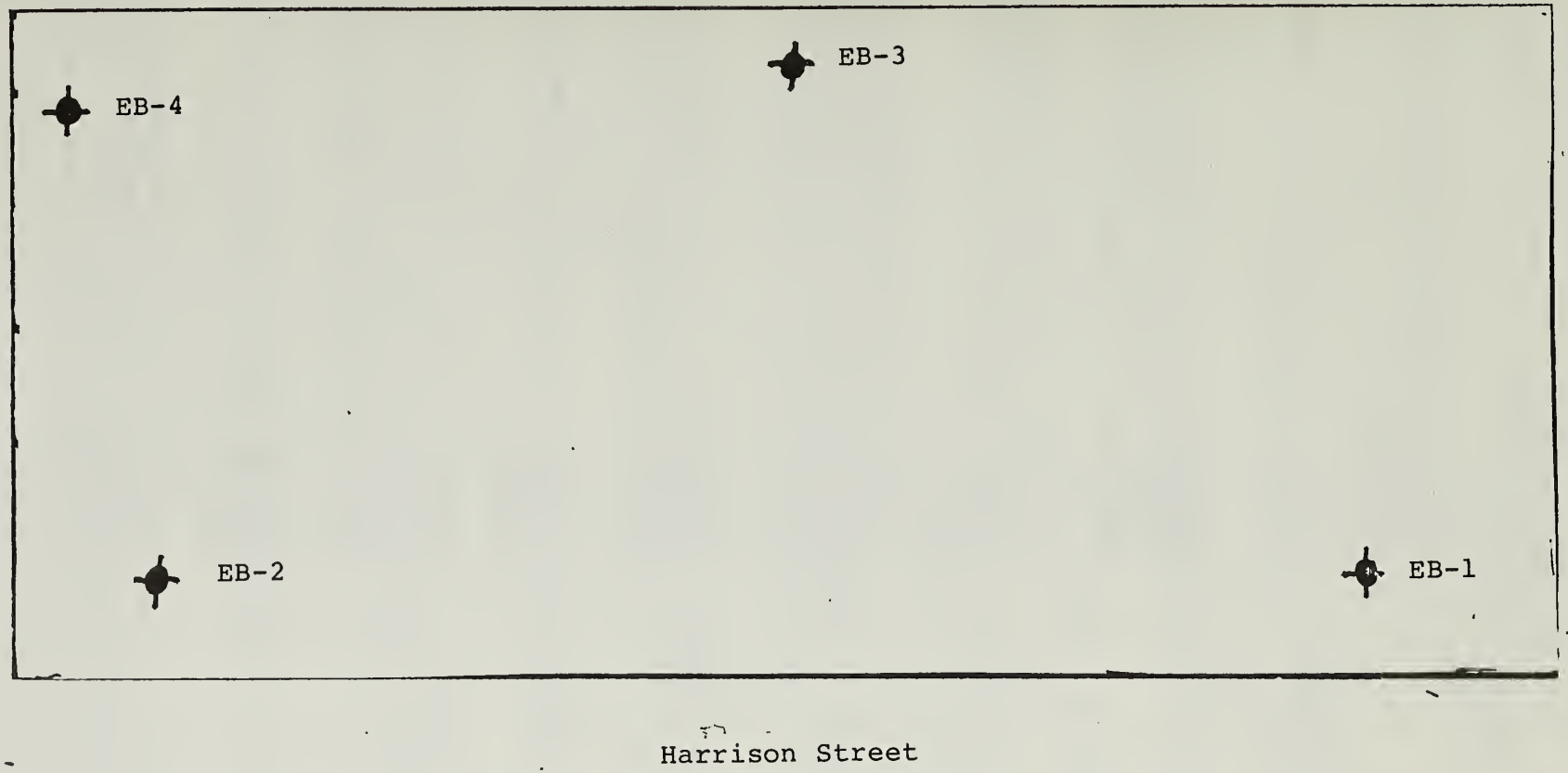
Sincerely Yours

Allen G. Pastron

Allen G. Pastron Ph.D
President, Archeo-Tec

FIGURE 1

Project Area



SOURCE: TAI ASSOCIATES

SCALE 0 15 30 60 FEET

EB= Experimental Borings placed 20 January 1983

2nd Street/Harrison Street

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Maps and Charts Consulted

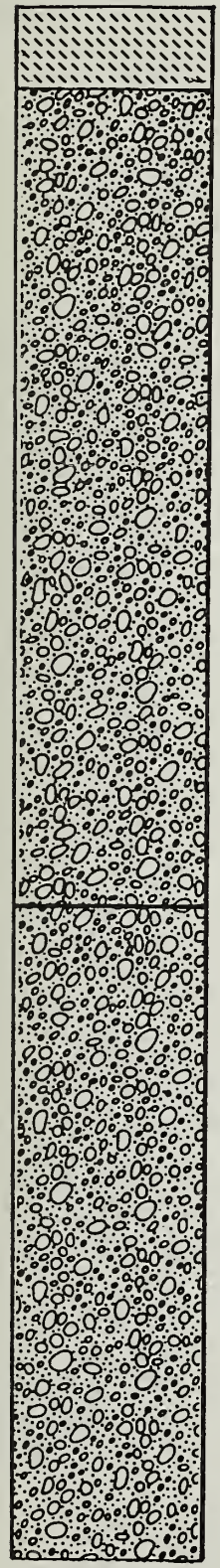
U.S. Coast Survey Charts for San Francisco: 1852, 1857 and 1869

Sanborn Insurance Company map for the block bounded by Harrison, Folsom, Second and Third Streets, San Francisco: 1887

EB-1

Located at the southeast corner of the project area; 20 feet west of the Second Street sidewalk, 8 feet north of the Harrison Street cement wall

6 inch flight auger



0 - 1 foot - Red rock fill

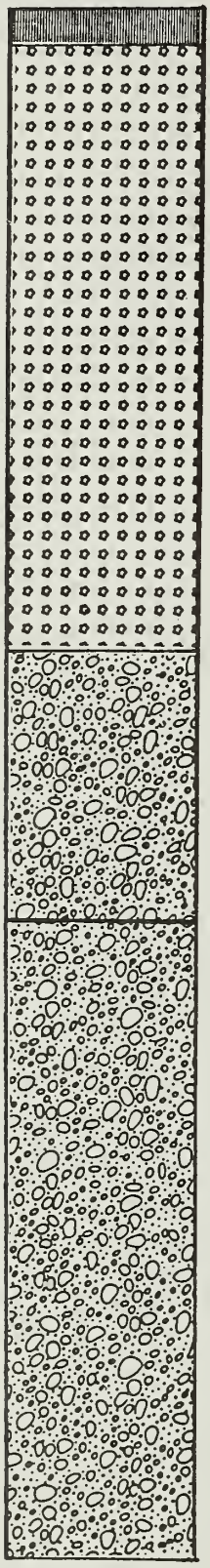
1 - 10 feet - Gray shale bedrock

10 - 40 feet - Gray shale bedrock

EB-2

Located at the southwest corner of the project area; 15 feet east of the wall of the adjoining building, 10 feet north of the wall at the project boundary

6 inch flight auger



0 - 3 inches - Cement slab

3" - 7 feet - Mixture of brown shale, sandy clay, gravel and glass fragments

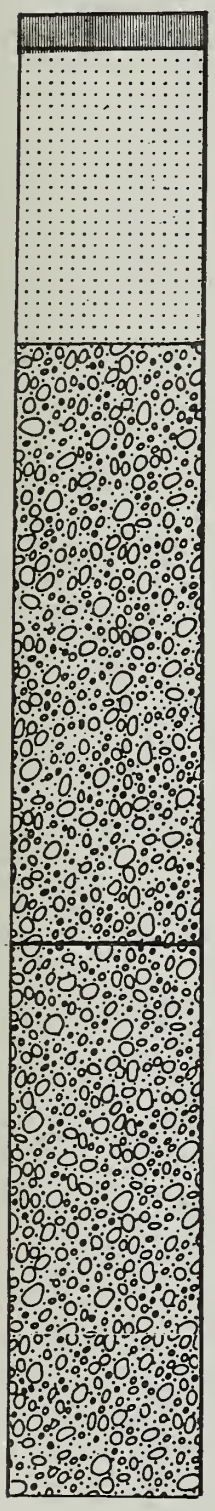
7 - 10 feet - Gray shale bedrock

10 - 44 feet - Gray shale bedrock

EB-3

Located 170 feet west of the Second Street sidewalk,
11 feet south of the north property line

6 inch flight auger



0 - 3 inches - Cement slab

3" - 3.5 feet - Mixture of tan sandstone, gray/ black shale, brick, glass, metal wire and wood fragments

3.5 - 10 feet - Gray shale

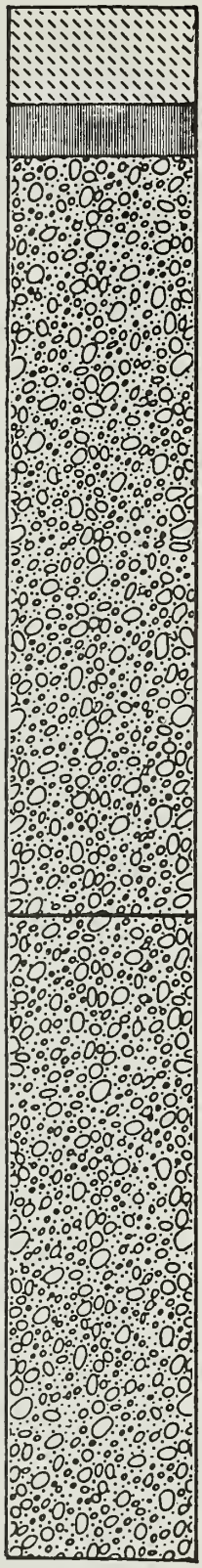
10 - 16 feet - Gray shale

Boring discontinued at 16 feet due to hardness of bedrock

EB - 4

Located 33 feet south of adjoining building, 10 feet east of adjoining building

6 inch flight auger



0 - 1 foot - Mixture of red rocky fill and sand

1 - 1.5 feet - Cement slab

1.5 - 10 feet - Gray/black shale

10 - 40 feet - Gray/black shale